Soil Stockpile Report
Parcel A, Report No. 4

Boeing Realty Corporation C-6 Facility
Los Angeles, California

August 1997

MONTGOMERY WATSON

SOIL STOCKPILE REPORT
PARCEL A
REPORT NO. 4

BOEING REALTY CORPORATION C-6 FACILITY
LOS ANGELES, CALIFORNIA

August 1997

Prepared For:

BOEING REALTY CORPORATION
4060 Lakewood Boulevard, 6th Floor
Long Beach, California 90808

Prepared By:

MONTGOMERY WATSON
250 North Madison Avenue
Pasadena, California 91101

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Appendices for this document are on file at Boeing Realty Corporation, Long Beach, California.

SECTION 1.0

INTRODUCTION

In October 1996, Montgomery Watson (Montgomery) was retained by McDonnell Douglas Realty Company (MDRC), now the Boeing Realty Corporation, to assist with the redevelopment of Parcel A (the Site) of their C-6 facility located in Los Angeles, California. Figure 1 presents the C-6 facility. Figure 2 delineates the Site. The Site was formerly used to manufacture and store aircraft parts.

1.1 OVERVIEW

The Site consists of the northernmost quarter of the C-6 facility, encompassing approximately 50 acres. Demolition of the following buildings at the Site has occurred: Building 29, 33, 34, 36, 37, 57, 58, 61, and 67. Demolition of the following buildings is pending: Building 40, 41, 43/44, 45, and 66-A.

Information gathered during the data compilation and evaluation phase of this project indicated the presence of petroleum products and other chemicals of concern in the surface and subsurface.

A soil sampling and remedial excavation effort is being conducted in conjunction with the removal of foundations, slabs, and below-ground structures. The purpose of this effort is to assess soil quality and remove soil affected with petroleum hydrocarbons and other chemicals of concern in preparation for redevelopment of the Site. Soil which is determined to be affected with petroleum hydrocarbons and other chemicals is excavated and stockpiled at the Site.

Stockpiled soil discussed in this report has been generated from remedial excavations conducted in the open area located east of Buildings 37 and 41. For convenience, this area is referred to as "Open Area No. 1" in this report.

1.2 PURPOSE AND OBJECTIVE

The purpose of this document is to evaluate the quality of the stockpiled soil generated from the remedial excavations discussed in this report. Specifically, this document is the fourth in a series of stockpile reports which follows the facility-wide strategy for assessing and screening the analytical data so that the stockpiled soils can be divided into two categories: 1) soils requiring treatment or off-site disposal, and 2) soils suitable for use as construction backfill at the Site.

Along with its companion document, *Post-Remedial Excavation Confirmation Sample Report, Parcel A, Report No. 4* (Montgomery Watson, 1997(e)), this report documents that the Site excavation efforts meet the soil screening criteria established in Section 3.1 of this report.

SECTION 2.0

OPEN AREA NO. 1
REMEDIAL EXCAVATION STOCKPILES

Open Area No. 1 is located along the eastern portion of the Site, east of Building 37 and Building 41 extending to the Normandie Avenue property boundary. Open Area No. 1 is so designated because of its absence of structures, except for the Building 43/44 water tanks in the northeast corner. Open Area No. 1 formerly included the Gravel Yard, which was used for storage of miscellaneous materials and parts from the manufacturing operations of the facility. The facility storm drain outfall to the storm sewer is located near the northeast corner of the area. Historically, a railroad spur crossed Open Area No. 1 trending from south to north.

Building 41 was formerly used as a boiler house. The water tanks located at Building 43/44 in the northeast corner of Open Area No. 1 were formerly used to store diesel fuel oil which was pumped into Building 41 through buried product pipelines. These tanks were converted from diesel storage to water tanks (part of the C-6 facility's fire suppression system) approximately 25 years ago. The abandoned product lines leading from the tanks to Building 41 were discovered during the demolition process, and remedial excavations discussed in this report were conducted to remove primarily hydrocarbon-affected soil associated with releases from these product lines. Remedial excavations discussed in this report were conducted at the southern portion of Open Area No. 1 near the location where the product lines entered Building 41.

The location of each remedial excavation discussed in this report is presented in Figure 3. The 20-foot by 20-foot grid used to reference Building 37 remedial excavations (Montgomery Watson, 1997(f-h)) was extended into Open Area No. 1 as presented in Figure 3 for the same purpose. Remedial excavations were recorded using the following nomenclature:

Open Area No. (OA#) - Remedial Excavation (RE) - Chronological Number (#)
e.g., OA1-RE-1

Pertinent information related to the remedial excavations and the associated stockpiled soil discussed in this report is presented below. The locations of each stockpile are presented in Figure 4 through Figure 7.

Excavation/Stockpile(s)	Approximate Volume	Date of Excavation	Stockpile Location(s)
OA1-RE-1 / A — J	2,500 cu yds total	14 Jul 97 — 16 Jul 97	West of Building 1
OA1-RE-2 / A1/A2 — J	2,500 cu yds total	16 Jul 97 — 18 Jul 97	West of Building 1 and within Building 37 footprint
OA1-RE-3 / A — J	2,500 cu yds total	18 Jul 97 — 21 Jul 97	Within Building 37 footprint

2.1 SOIL SAMPLING

Hot spot sampling and confirmation sampling have been employed at Open Area No. 1. Detailed procedures for these activities are outlined in the *Sampling and Analysis Plan for Demolition Activities at the Douglas Aircraft Company C-6 Facility* prepared by Integrated Environmental Services, Inc. (IESI, 1997(a)) and previously submitted to the Regional Water Quality Control Board (RWQCB). In addition, stockpile sampling was performed on the excavated material. These procedures can be summarized as follows:

2.1.1 Hot Spot Sampling

Hot spot sampling was conducted at predetermined locations where former items of concern were located (e.g., product lines), and at other locations where demolition activities revealed soil which may have been affected by petroleum hydrocarbons or other chemicals of concern.

Hot spot samples were collected by first exposing "fresh" soil beneath the surface using a stainless steel utensil or similar device. A photoionization detector (PID) was used to measure headspace organic vapor concentrations in the freshly exposed soil at each location. Soil samples were collected for analysis where at least one of the following conditions existed: 1) the headspace VOC reading exceeded 5 ppm, (2) areas where staining of the soil was visible, or (3) areas where odors were noticeable.

Soil samples were collected for analysis in pre-cleaned, stainless steel sleeves by driving the sleeve into the soil with a rubber mallet or drive sampler. The ends of the sleeves were then covered with Teflon film and secured with plastic end caps. A unique sample identification using the following nomenclature was written in indelible ink on a sample label and attached to the sleeve.

Product Line (PL) - Grab Sample (GS) - Chronological Number (#) - Sample Depth (feet)
e.g., PL-GS-2-2.5'

Sample sleeves were placed in a cooler with blue ice and transported under chain-of-custody to a State-certified laboratory for analysis. Hot spot samples have been analyzed according to the analytical schedule presented in Table 1.

Hot spot sample locations discussed in this report have been subsequently excavated and data collected from these samples are considered representative of the corresponding stockpile soil quality.

2.1.2 Stockpile Sampling

Excavated soil was placed in stockpiles each consisting of approximately 250 cubic yards of soil. Generally, stockpile samples were collected at a frequency of approximately one sample per stockpile. Stockpile samples were collected from the most noticeably affected soil within the stockpile. Samples were collected by using a shovel to cut vertically into the side of a stockpile at each sample location to expose "fresh" soil; samples were then collected from the exposed vertical wall and headspace VOC concentrations were measured using the PID.

Soil samples were collected for analysis in pre-cleaned, stainless steel sleeves by driving the sleeve into the soil with a rubber mallet or drive sampler. The ends of the sleeves were then covered with Teflon film and secured with plastic end caps. A unique sample identification using the following nomenclature was written in indelible ink on a sample label and attached to the sleeve.

Open Area No. (OA#) - Remedial Excavation No.(RE#) - Stockpile Chronological Number (SP#)

e.g., OA1-RE1-SP4

Sample sleeves were placed in a cooler with blue ice and transported under chain-of-custody to a State-certified laboratory for analysis.

Stockpile samples have been analyzed according to the analytical schedule presented in Table 1.

2.1.3 Confirmation Sampling

Confirmation sampling was conducted to ensure that residual surface soil (upper 12 feet) met soil screening levels at each excavation. Confirmation samples discussed in this report were limited to those collected through "pot hole" excavations in the vicinity of the railroad spur. These confirmation samples were collected to: (1) assess whether impacted soil was present, and if so, (2) to confirm the depth to clean, native soil.

Using a backhoe, soil was removed from "pot hole" excavations near the railroad spur to the depth of 4 feet where native soil was believed to occur based on PID readings, observations, and odor. Confirmation samples were collected in the soil brought to the surface in the backhoe bucket. Confirmation soil samples were collected by first exposing "fresh" soil using a stainless steel utensil or similar device. Soil samples were collected for analysis in pre-cleaned, stainless steel sleeves by driving the sleeve into the soil with a rubber mallet or drive sampler. The ends of the sleeves were then covered with Teflon film and secured with plastic end caps.

A unique sample identification using the following nomenclature was written in indelible ink on a sample label and attached to the sleeve.

Railroad Spur (RR) - Grab Sample (GS) - Chronological Number (#) - Sample Depth (feet)
e.g., RR-GS-35-4'

Sample sleeves were placed in a cooler with blue ice and transported under chain-of-custody to a State-certified laboratory for analysis. Confirmation samples have been analyzed according to the analytical schedule presented in Table 1.

Confirmation sample locations discussed in this report have been subsequently excavated and data collected from these samples are considered representative of the corresponding stockpile soil quality.

2.2 SOIL EXCAVATION

Remedial excavation to remove affected soil was conducted when one of the following conditions was discovered: (1) elevated PID readings greater than 5 ppm in hot spot samples, (2) visible staining, and (3) noticeable odors. A conservative approach was employed such that soil which exhibited any of these characteristics was excavated and stockpiled.

Remedial excavations were performed using heavy equipment (excavators, front-end loaders, end-dump trucks) associated with the building demolition effort. Air monitoring in accordance with South Coast Air Quality Management District Rule 1166 was conducted throughout remedial excavation activities.

The maximum depth of any excavation was approximately 12 feet below grade. Excavated soil was segregated based on the location from where it was removed. Soil stockpiles were placed on asphalt or plastic sheeting, and covered with plastic sheeting to protect the soil from the elements. The locations of each stockpile are presented in Figure 4 through Figure 7.

2.3 STOCKPILE SOIL QUALITY

Soil removal at Open Area No. 1 began on July 14, 1997 due to PID readings, visual observations, and noticeable odors in soil in the vicinity of the product lines.

2.3.1 OA1-RE-1 Stockpiles A through J

Soil removal at remedial excavation OA1-RE-1 began on July 14, 1997 and was completed on July 16, 1997.

Approximately 2,500 cubic yards of stockpiled soil (Stockpiles A through J) associated with this additional excavation was removed with an excavator, transported and stockpiled west of Building 1 as shown in Figure 4.

The following types of samples have been collected and analyzed to evaluate the soil quality in OA1-RE-1 Stockpiles A through J:

- Hot spot sample
- Stockpile samples

One hot spot sample was collected along the product lines at the location presented in Figure 8. The analytical data for this sample are summarized in Table 2.

One stockpile sample was collected from each stockpile (Stockpiles A through J). The locations of these samples are presented in Figure 4. Analytical data for these samples are summarized in Table 3.

A complete set of laboratory analytical reports is presented in Appendix A-1.

2.3.2 OA1-RE-2 Stockpiles A1/A2 through J

Remedial excavation OA1-RE-2 was conducted from July 16, 1997 through July 18, 1997. Approximately 500 cubic yards of soil associated with this excavation was removed with an excavator, transported and stockpiled west of Building 1 (Stockpiles A1/A2 and B) as presented in Figure 5. Approximately 2,000 cubic yards of soil associated with this excavation was removed with an excavator, transported and stockpiled within the Building 37 footprint (Stockpiles C through J) as presented in Figure 6.

The following types of samples have been collected and analyzed to evaluate the soil quality in OA1-RE-2 Stockpiles A1/A2 through J:

- Hot spot sample
- Stockpile samples
- Confirmation sample

One hot spot sample was collected along the product line at the location presented in Figure 8. The analytical data for this sample are summarized in Table 4.

Generally, one stockpile sample was collected from each stockpile (Stockpiles A1/A2 through J). The locations of these samples are presented in Figure 5 and Figure 6. Analytical data for these samples are summarized in Table 5.

One confirmation sample was collected at the location presented in Figure 8. The analytical data for this sample are summarized in Table 6.

A complete set of laboratory analytical reports is presented in Appendix A-2.

2.3.3 OA1-RE-3 Stockpiles A through J

Soil removal at remedial excavation OA1-RE-3 began on July 18, 1997 and was completed on July 21, 1997.

Approximately 2,500 cubic yards of stockpiled soil associated with this additional excavation was removed with an excavator, transported and stockpiled within the Building 37 footprint as shown in Figure 7.

The following types of samples have been collected and analyzed to evaluate the soil quality in OA1-RE-3 Stockpiles A through J:

- Stockpile samples
- Confirmation sample

One stockpile sample was collected from each stockpile (Stockpiles A through J). The locations of these samples are presented in Figure 7. Analytical data for these samples are summarized in Table 7

One confirmation sample was collected at the location presented in Figure 8. The analytical data for this sample are summarized in Table 8.

A complete set of laboratory analytical reports is presented in Appendix A-3.

SECTION 3.0

DATA SUMMARY AND CONCLUSIONS

This section presents soil screening criteria and the methodology used throughout the project for the identification of soils that are suitable for use as backfill. In addition, this section summarizes the analytical data associated with each stockpile discussed in this report and uses the aforementioned methodology to evaluate whether the soil stockpiles are suitable for use as backfill, or require treatment and/or off-site disposal.

3.1 BACKFILL SOIL SCREENING METHODOLOGY

The backfill soil screening criteria have been developed to satisfy two primary objectives: (1) residual concentrations in backfill materials must be below levels projected to impact underlying drinking water sources, and (2) residual concentration in backfill materials must be below levels projected to potentially impact human health under future construction and commercial/industrial activities at the Site.

In accordance with these objectives, individual remediation goals were developed for both drinking water and human health protection. The development of each of these remediation goals is discussed below followed by a summary of how these values will be implemented in the evaluation of soil suitability for backfill purposes.

Drinking Water

The generalized hydrostratigraphic succession at the Site is as follows (Kennedy/Jenks, 1996(b); Dames & Moore, 1993; Department of Water Resources, 1961):

SURFACE
Bellflower Aquitard
Gage Aquifer
El Segundo Aquitard
Lynwood Aquifer

Depth to groundwater at the Site is approximately 65 feet. Hydrostratigraphic information from voluminous data collected at the neighboring Del Amo and Montrose Chemical Superfund Sites can be correlated with subsurface information collected at the Site. Hydrostratigraphic correlations suggest that the shallowest groundwater at the Site occurs in the Bellflower Aquitard, which is not recognized as a drinking water source in the region (Dames & Moore, 1993).

Although the depth to the top of the Gage Aquifer should vary from approximately 120 to 150 feet (from west to east) across the Site, the Gage Aquifer is not utilized as a source of drinking water in the region (Dames & Moore, 1993). Consequently, the shallowest drinking water resource in the region would therefore be the Lynwood Aquifer, projected to occur at the depths of approximately 210 to 240 feet (from west to east) across the Site.

Based on the depth to the first drinking water source, the following permissible concentrations to 12 feet below ground surface have been approved by the RWQCB:

Analytes	Permissible Level
TRPH	
C4 - C12	2,000 mg/kg
C13 - C22	10,000 mg/kg
C22+	50,000 mg/kg
Metals	TTLC and STLC

Notes:
TTLC: Total Threshold Limit Concentration per CCR Title 22.
STLC: Soluble Threshold Limit Concentration per CCR Title 22.

Human Health

Site-specific health-based remediation goals (HBRGs) were developed by Integrated Environmental Services, Inc. using standard United States Environmental Protection Agency (USEPA) and California Environmental Protection Agency (Cal/EPA) methodologies. HBRGs were derived assuming future commercial industrial land use with an interim construction phase. Each HBRG will be used as a predictor of the risk posed by individual VOC, SVOC, PCB, and metal contaminants in soil. The additive effects of multiple contaminants have been accounted for by setting conservative target risk levels at $1x10^{-6}$ for carcinogens and 0.2 for toxicants. The final cumulative risks for all residual contaminants at the Site will be addressed in the post-remedial risk assessment. Table 9 summarizes the HBRGs to be used at the Site. A more detailed discussion of the methodologies used to derive these values has been presented in the *Health-Based Remediation Goals for Surface Soils* document (IESI, 1997(b)).

Evaluation Process

All soil excavated at the Site will undergo the soil screening evaluation process depicted in Figure 9. This evaluation process incorporates both drinking water and human health-based criteria. Soils that fail any portion of this test will be subjected to treatment prior to use as backfill or disposed of off-site. Once soils have passed all aspects of the evaluation procedure, they should be made readily available for use as backfill.

Additionally, metal concentration(s) in stockpiled soils were used to further characterize the waste soil as follows:

Stockpiled soils were classified as non-RCRA hazardous waste if representative soil samples contained any metal in total concentration equal to or greater than its respective TTLC per CCR Title 22. Representative soil samples were analyzed for soluble metal concentration using the Waste Extraction Test (WET) if the total concentration of any metal was equal to or greater than 10 times its respective STLC but less than its TTLC per CCR Title 22. Stockpiled soil was classified as non-RCRA hazardous waste if representative soil samples contained any metal in soluble concentration using the WET equal to or greater than its respective STLC per CCR Title 22. Additionally, representative soil samples which were analyzed using the WET were also analyzed for soluble metal concentrations using the Toxic Characteristic Leaching Procedure (TCLP). Stockpiled soil was classified as a RCRA characteristic hazardous waste if the soluble concentration of any metal using the TCLP was equal to or greater than the toxicity characteristic (TC) per CCR Title 22.

3.2 STOCKPILE EVALUATIONS

Chemicals of concern at the Site can be summarized as follows:

- Petroleum hydrocarbons
- VOCs
- SVOCs
- PCBs
- Metals

The sampling and analysis program for remedial excavations discussed in this report was conservatively focused on these chemicals of concern by implementing the following analytical schedule:

- All samples were analyzed for TRPH and metals.
- All samples which contained TRPH in concentration greater than 10,000 mg/kg were subsequently analyzed for carbon chain length.
- All stockpile samples were additionally analyzed for VOCs and SVOCs.
- Stockpile samples were additionally analyzed for PCBs at a frequency of one sample per remedial excavation.
- All hot spot samples collected along the product lines were analyzed for VOCs, SVOCs, PCBs, and fuel characterization.

- Railroad spur confirmation samples were analyzed for PCBs, and selectively analyzed for VOCs, SVOCs, and fuel characterization based on field observations.

3.2.1 OA1-RE-1 Stockpiles A through J

Soil samples (hot spot and stockpile) associated with Stockpiles A through J are cross-referenced in Table 10. Analytical data associated with these samples are presented in Table 2 and Table 3. These data are summarized and evaluated below.

Petroleum Hydrocarbons: Hot spot sample PL-GS-1-2.5' (Stockpile J) contained the highest concentration of TRPH (16,000 mg/kg). This sample exceeded the permissible concentration of 10,000 mg/kg for the C13 - C22 hydrocarbon chain range.

VOCs: All VOC concentrations were below their respective HBRGs.

SVOCs: Samples representative of soil quality in Stockpiles A, B, G, I, and J exceeded the HBRG for at least one compound as depicted in Table 2 and Table 3.

PCBs: PCBs were not detected.

Metals: Stockpile samples OA1-RE1-SP1 (Stockpile A), OA1-RE1-SP2 (Stockpile B), OA1-RE1-SP5 (Stockpile E), OA1-RE1-SP7 (Stockpile G), and hot spot sample PL-GS-1-2.5' (Stockpile J) exceeded 10 times the STLC for chromium; however, these samples did not meet or exceed the STLC when analyzed using the WET, or the TC when analyzed using the TCLP. Stockpile samples OA1-RE1-SP1 (Stockpile A), OA1-RE-1-SP2 (Stockpile B), and hot spot sample PL-GS-1-2.5' (Stockpile J) exceeded the HBRG for lead. None of the other samples met or exceeded TTLC, 10 times the STLC, or HBRGs.

Conclusion: The following stockpiles fail the soil screening criteria established in Section 3.1 of this report as follows:

Stockpile A	> lead HBRG; > SVOC HRBGs
Stockpile B	> lead HBRG; > SVOC HRBGs
Stockpile G	> SVOC HBRGs
Stockpile I	> SVOC HRBG
Stockpile J	> lead HBRG; > SVOC HBRGs; >TRPH carbon chain

These stockpiles will be treated or hauled off-site for proper disposal as non-hazardous waste.

The data suggest that Stockpiles C, D, E, F, and H meet the soil screening criteria. Approval to use this stockpiled soil for backfill at the Site is requested.

For convenience, the results of the soil screening evaluation are included in Table 10.

3.2.2 OA1-RE-2 Stockpiles A1/A2 through J

Soil samples (hot spot, stockpile, and confirmation) associated with Stockpiles A1/A2 through J are cross-referenced in Table 10. Analytical data associated with these samples are presented in Table 4, Table 5, and Table 6. These data are summarized and evaluated below.

Petroleum Hydrocarbons: Stockpile sample OA1-RE2-SP4 (Stockpile D) exceeded the permissible concentration for the C13 - C22 hydrocarbon chain range. Hot spot sample PL-GS-2-2.5' (Stockpile E) exceeded the permissible concentration for hydrocarbon chain ranges C4 - C12 and C13 - C22.

VOCs: All VOC concentrations were below their respective HBRG.

SVOCs: Samples representative of soil quality in Stockpiles A1/A2, C, D, E, F, G, H, I, and J exceeded the HBRG for at least one compound as depicted in Table 4 and Table 5.

PCBs: PCBs were not detected.

Metals: Stockpile samples OA1-RE2-SP5 (Stockpile E) and OA1-RE2-SP7 (Stockpile G) exceeded 10 times the STLC for chromium; however, these samples did not meet or exceed the STLC when analyzed using the WET, or the TC when analyzed using the TCLP. Stockpile samples OA1-RE2-SP5 (Stockpile E) and OA1-RE2-SP7 (Stockpile G) contained lead in excess of the HBRG; each of these samples also exceeded the STLC for lead when analyzed using the WET, but did not meet or exceed the TC for lead when analyzed using the TCLP. No other sample met or exceeded the TTLC, 10 times the STLC, or HBRGs.

Conclusion: The following stockpiles fail the soil screening criteria established in Section 3.1 of this report as follows:

Stockpile A1/A2	> SVOC HBRGs
Stockpile C	> SVOC HBRGs
Stockpile D	> SVOC HBRGs; > TRPH carbon chain
Stockpile E*	> lead HBRG/STLC; > SVOC HBRGs; > TRPH carbon chain
Stockpile F	> SVOC HBRGs
Stockpile G*	> lead HBRG/STLC; > SVOC HBRGs
Stockpile H	> SVOC HBRGs
Stockpile I	> SVOC HBRGs
Stockpile J	> SVOC HBRG

The asterisk (*) denotes stockpiles E and G which exceed the STLC for lead and will be properly disposed off-site as non-RCRA hazardous waste. The remaining stockpiles listed above will be treated or hauled off-site for proper disposal as non-hazardous waste.

The data suggest that Stockpile B meets the soil screening criteria. Approval to use this stockpiled soil for backfill at the Site is requested.

For convenience, the results of the soil screening evaluation are included in Table 10.

3.2.3 OA1-RE-3 Stockpiles A through J

Soil samples (stockpile and confirmation) associated with Stockpiles A through J are cross-referenced in Table 10. Analytical data associated with these samples are presented in Table 7 and Table 8. These data are summarized and evaluated below.

Petroleum Hydrocarbons: Stockpile sample OA1-RE3-SP3 (Stockpile C) contained the highest concentration of TRPH (1,700 mg/kg). This concentration is below the permissible concentration limit and therefore TRPH was not speciated.

VOCs: All VOC concentrations were below their respective HBRG.

SVOCs: Samples representative of soil quality in Stockpiles B, C, and E exceeded the HBRG for at least one compound as depicted in Table 7.

PCBs: PCBs were not detected.

Metals: Stockpile samples OA1-RE3-SP6 (Stockpile F), OA1-RE3-SP8 (Stockpile H), OA1-RE3-SP9 (Stockpile I), and OA1-RE3-SP10 (Stockpile J) exceeded 10 times the STLC value for chromium, but did not exceed the STLC when analyzed using the WET or the TC when analyzed using the TCLP. No other sample met or exceeded TTLC, 10 times the STLC, or HBRGs.

Conclusion: The following stockpiles fail the soil screening criteria established in Section 3.1 of this report as follows:

Stockpile B	> SVOC HBRG
Stockpile C	> SVOC HBRG
Stockpile E	> SVOC HBRG

These stockpiles will be treated or hauled off-site for proper disposal as non-hazardous waste.

The data suggest that Stockpiles A, D, F, G, H, I, and J meet the soil screening criteria. Approval to use this stockpiled soil for backfill at the Site is requested.

For convenience, the results of the soil screening evaluation are included in Table 10.

SECTION 4.0

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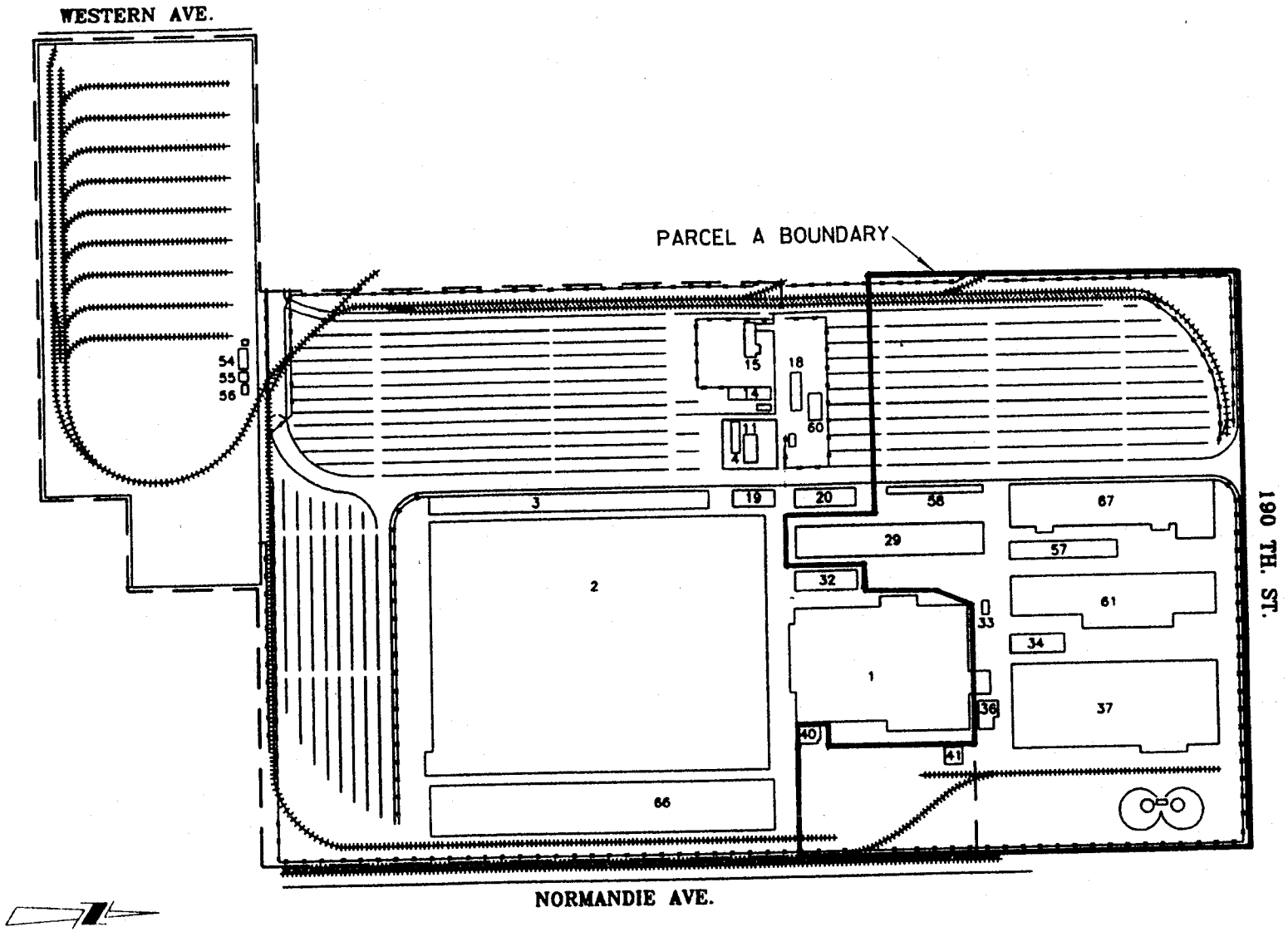
Figures

MONTGOMERY WATSON

C-6 FACILITY MAP

FIG. 1



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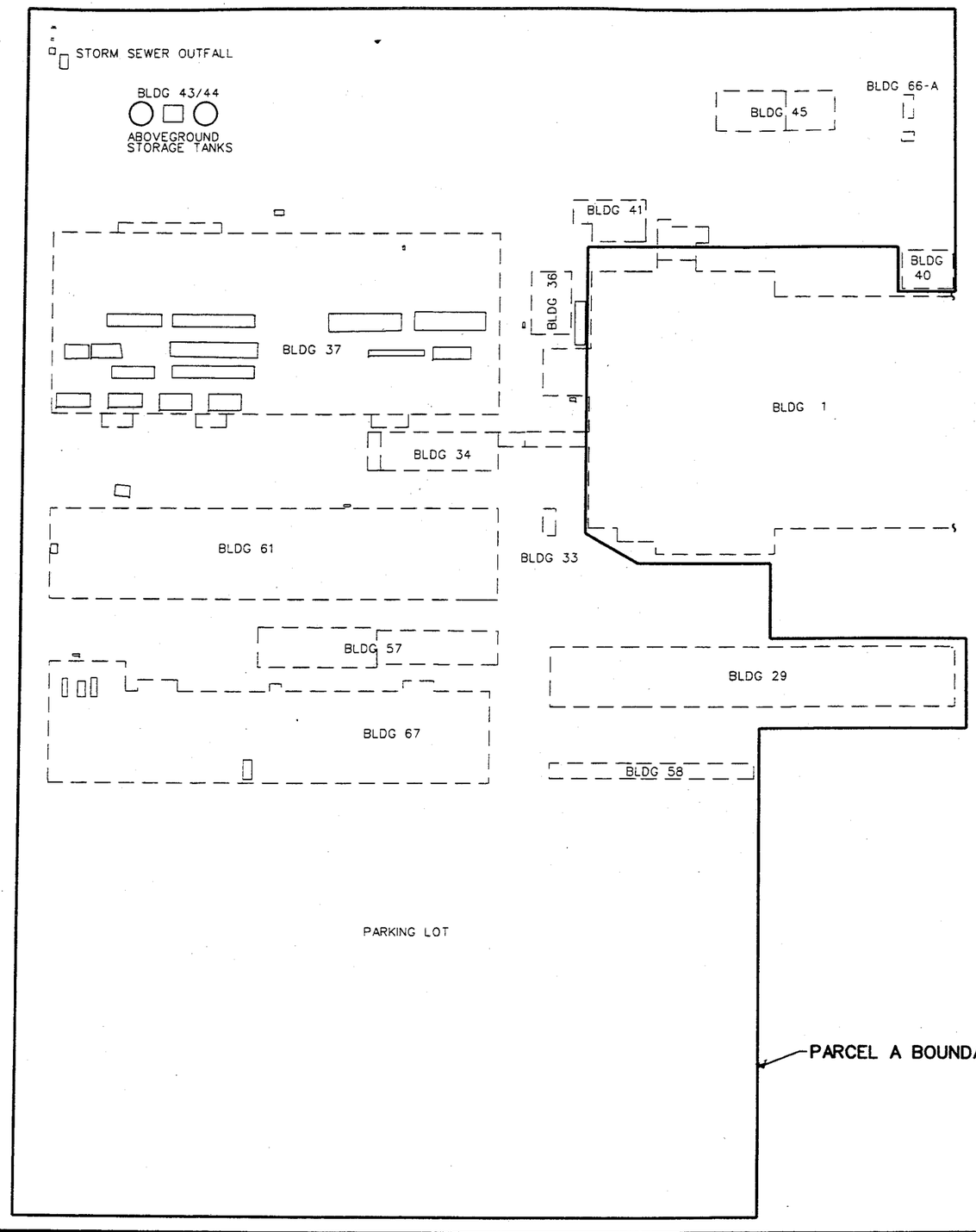
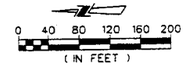
Approximate Scale: 1"=600'

Base map developed from Facility Layout and Subject Property Map by Kennedy/Jenks Consultants, May 1996.

BOE-C6-0061480





BASE MAP DEVELOPED FROM TAIT & ASSOCIATES INC. SURVEY DRAWING DATED 10/22/96.

REV	DATE	BY	DESCRIPTION

SCALE: AS SHOWN

DESIGNED
DRAWN N. CHRAKIAN
CHECKED S. REINERS

SUBMITTED
PROJECT ENGINEER R. C. E. NO. DATE
RECOMMENDED
MONTGOMERY WATSON R. C. E. NO. DATE

MONTGOMERY WATSON
Pasadena, California

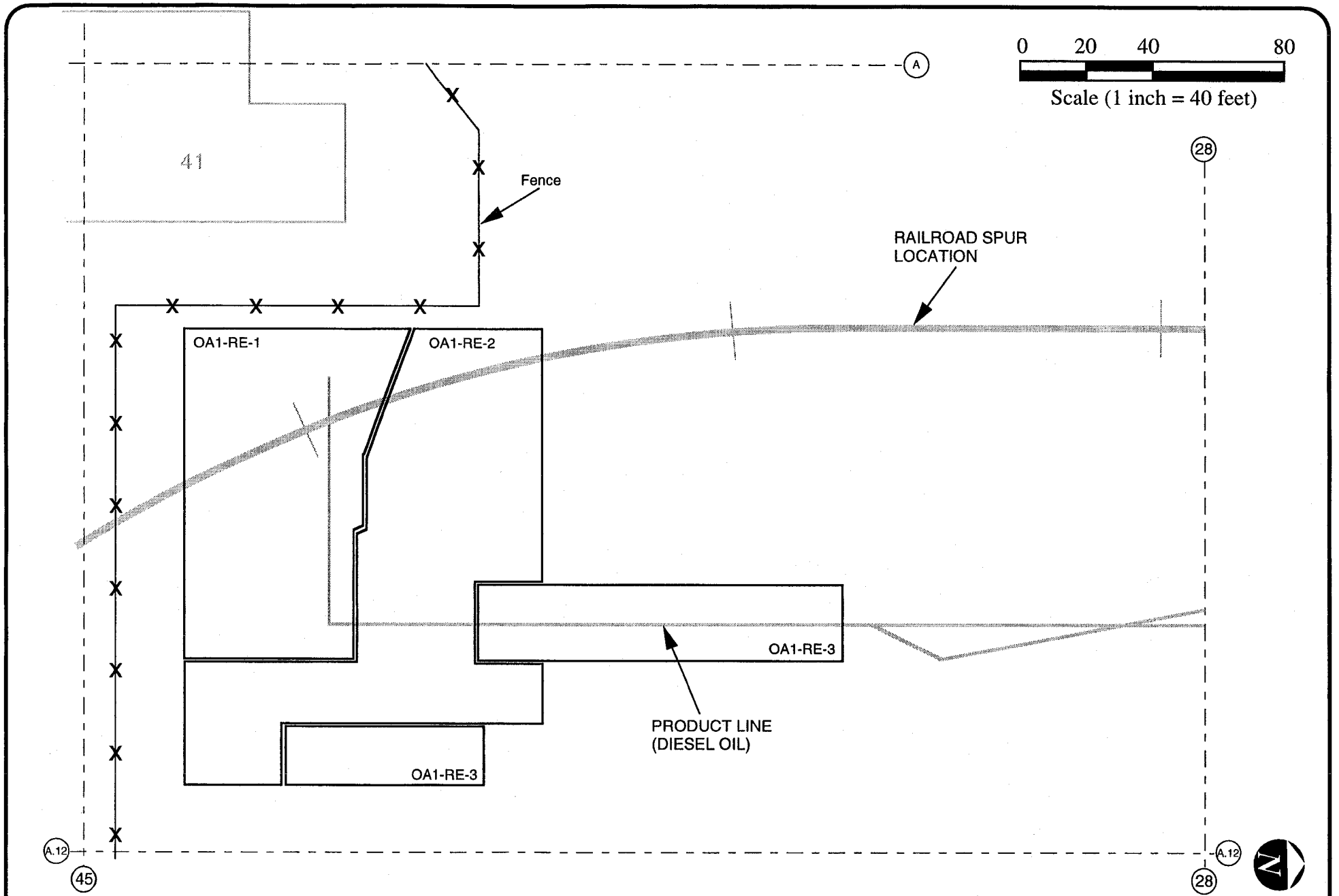
APPROVED DATE
APPROVED DATE

BOEING REALTY CORPORATION
PARCEL A
SITE MAP

SHEET FIG. 2 OF • SHEETS

JOB No. • FILE No. •

BOE-C6-0061481



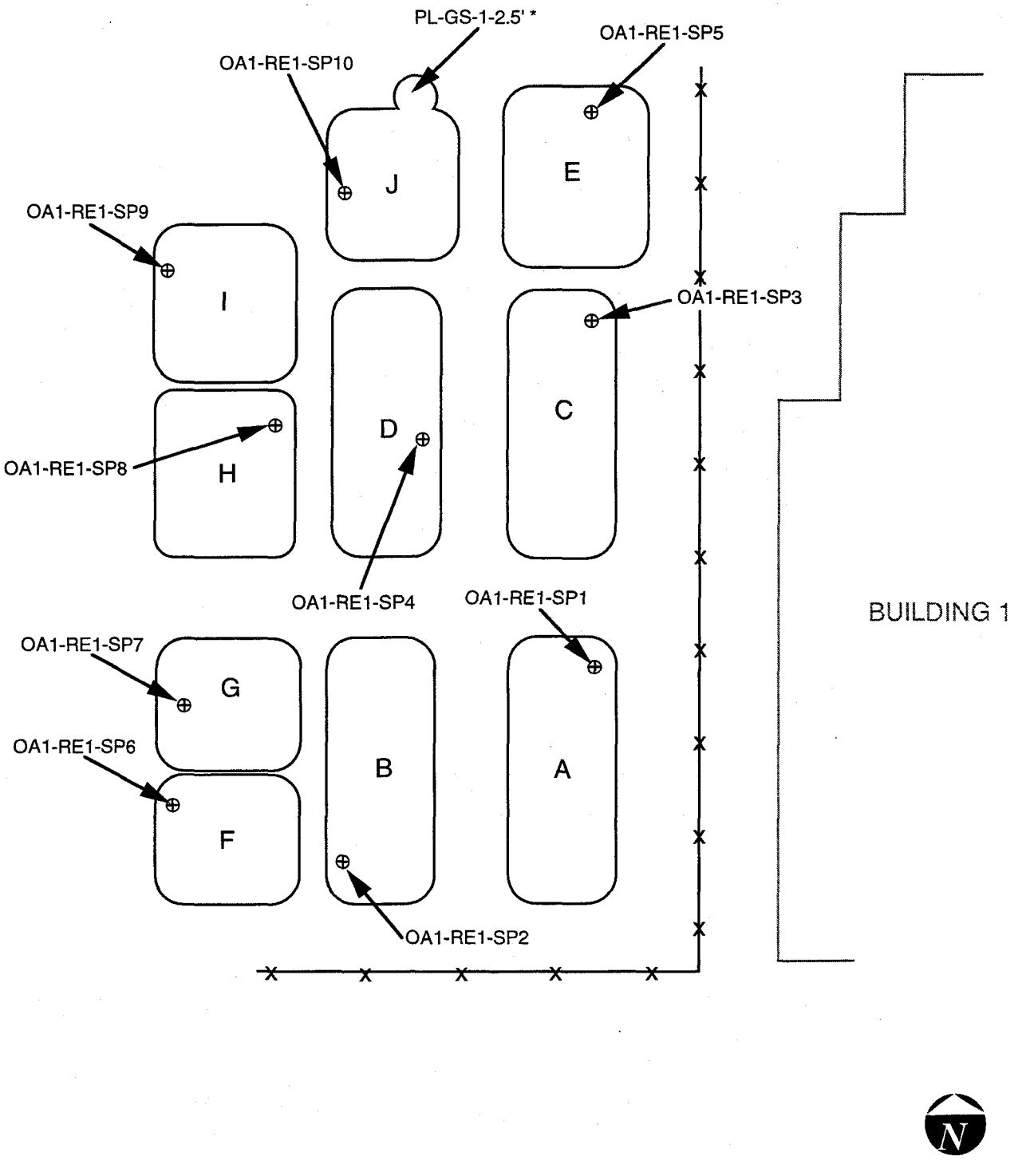
BOEING REALTY CORPORATION
C-6 FACILITY

Remedial Excavations OA1-RE-1, OA1-RE-2, and OA1-RE-3 Locations

FIGURE 3

BOE-C6-0061482

Not to Scale



* See Figure 8 for this Hot Spot Sample Location

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FIGURE 4

Remedial Excavation OA1-RE-1 Stockpiles and Sample Locations

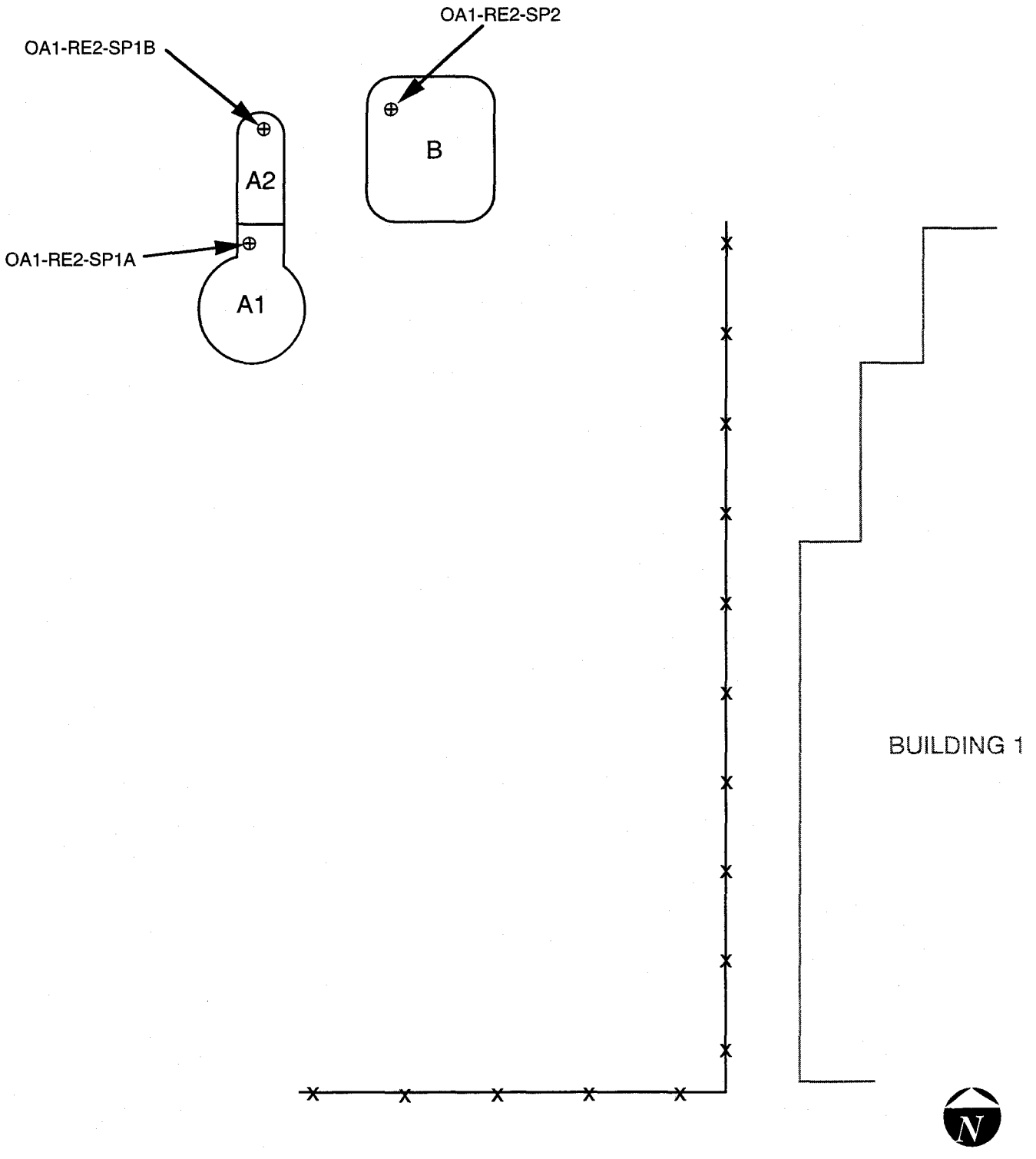

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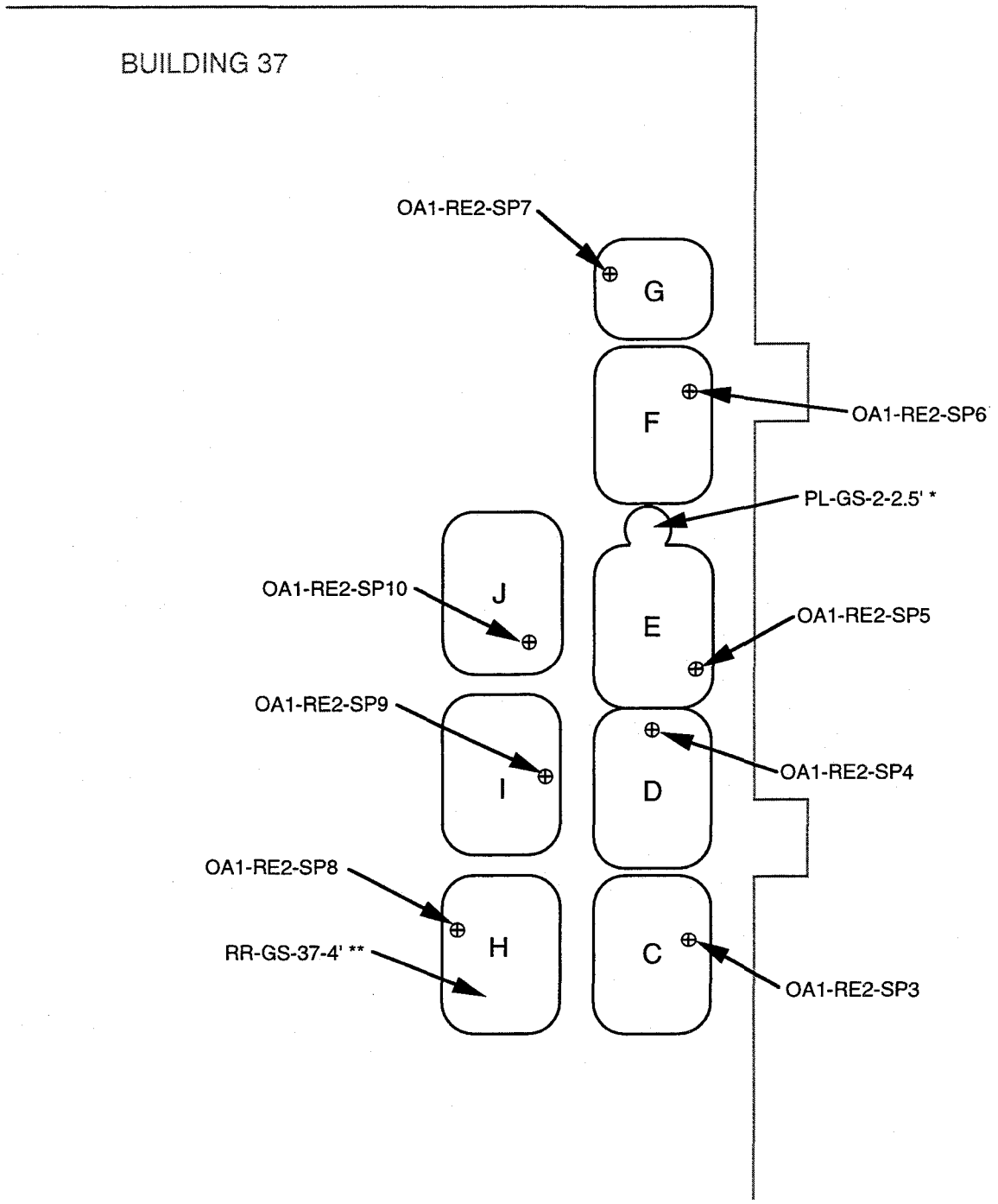
FIGURE 5

Remedial Excavation OA1-RE-2 Stockpiles A1/A2 and B Stockpiles and Sample Locations

Not to Scale



* See Figure 8 for this Hot Spot Sample Location

** See Figure 8 for this Confirmation Sample Location

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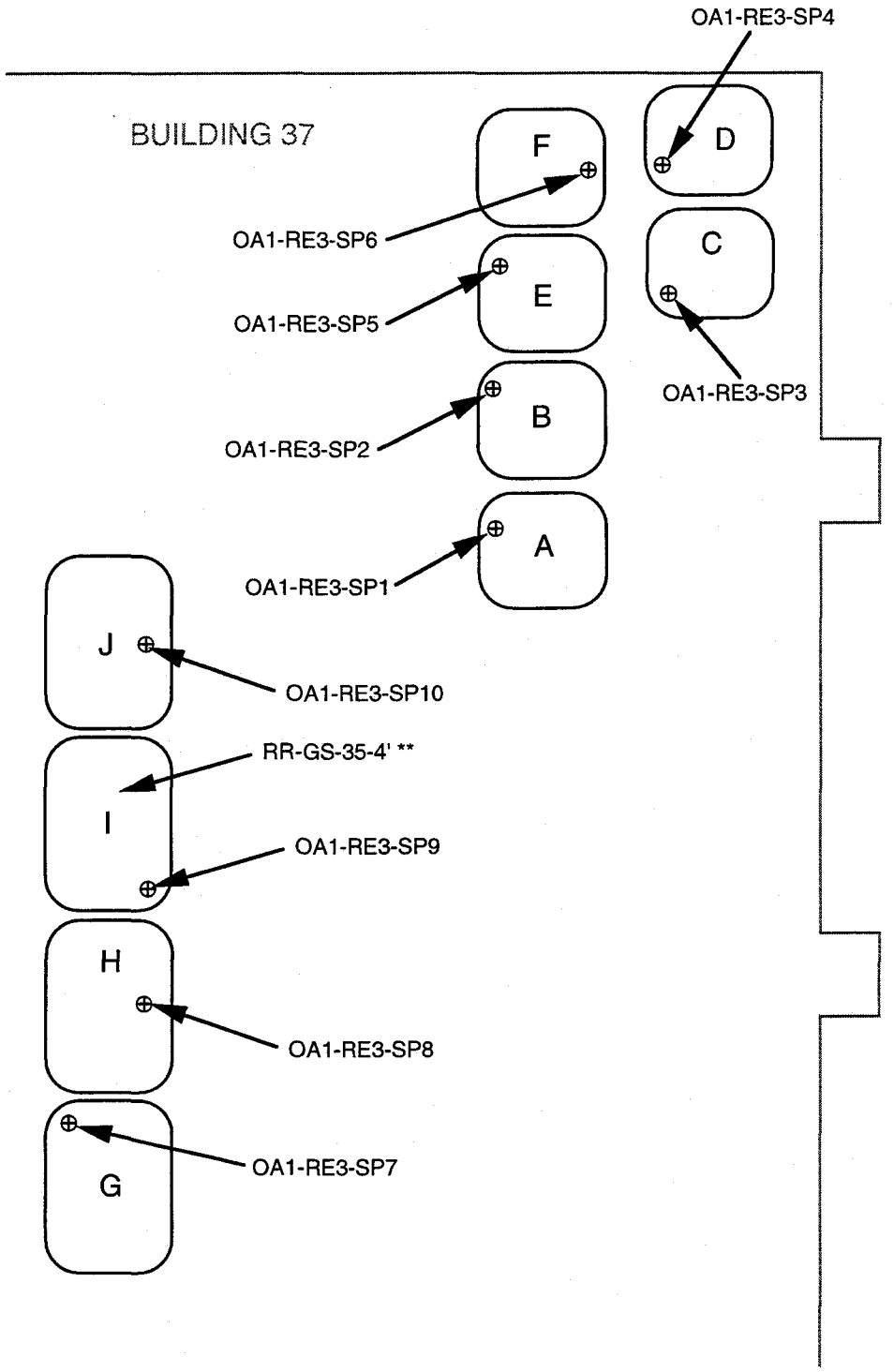
FIGURE 6

Remedial Excavation OA1-RE-2 Stockpiles C through J
Stockpiles and Sample Locations

Not to Scale



** See Figure 8 for this Confirmation Sample Location

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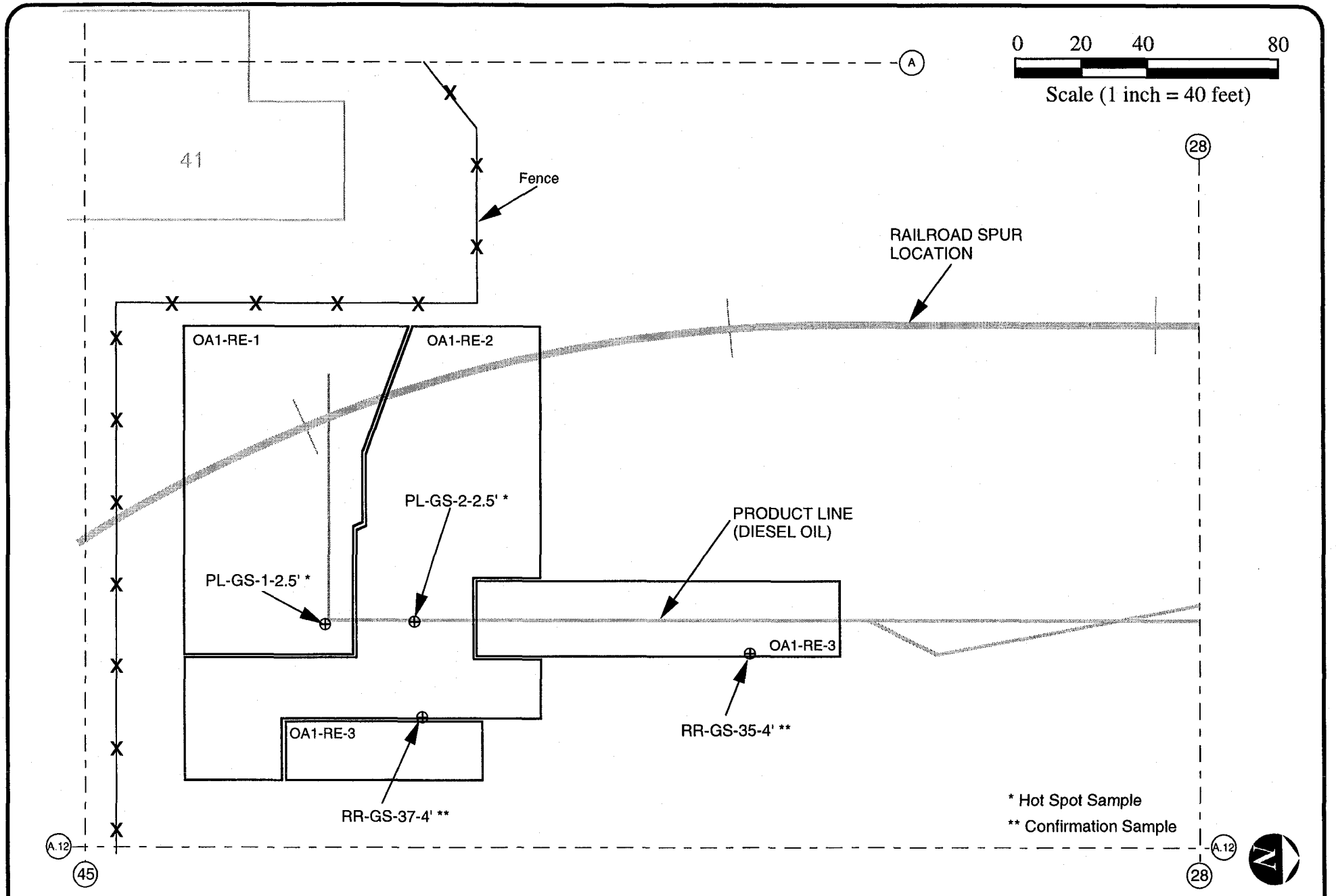
FIGURE 7

Remedial Excavation OA1-RE-3 Stockpiles and Sample Locations



BOEING REALTY CORPORATION
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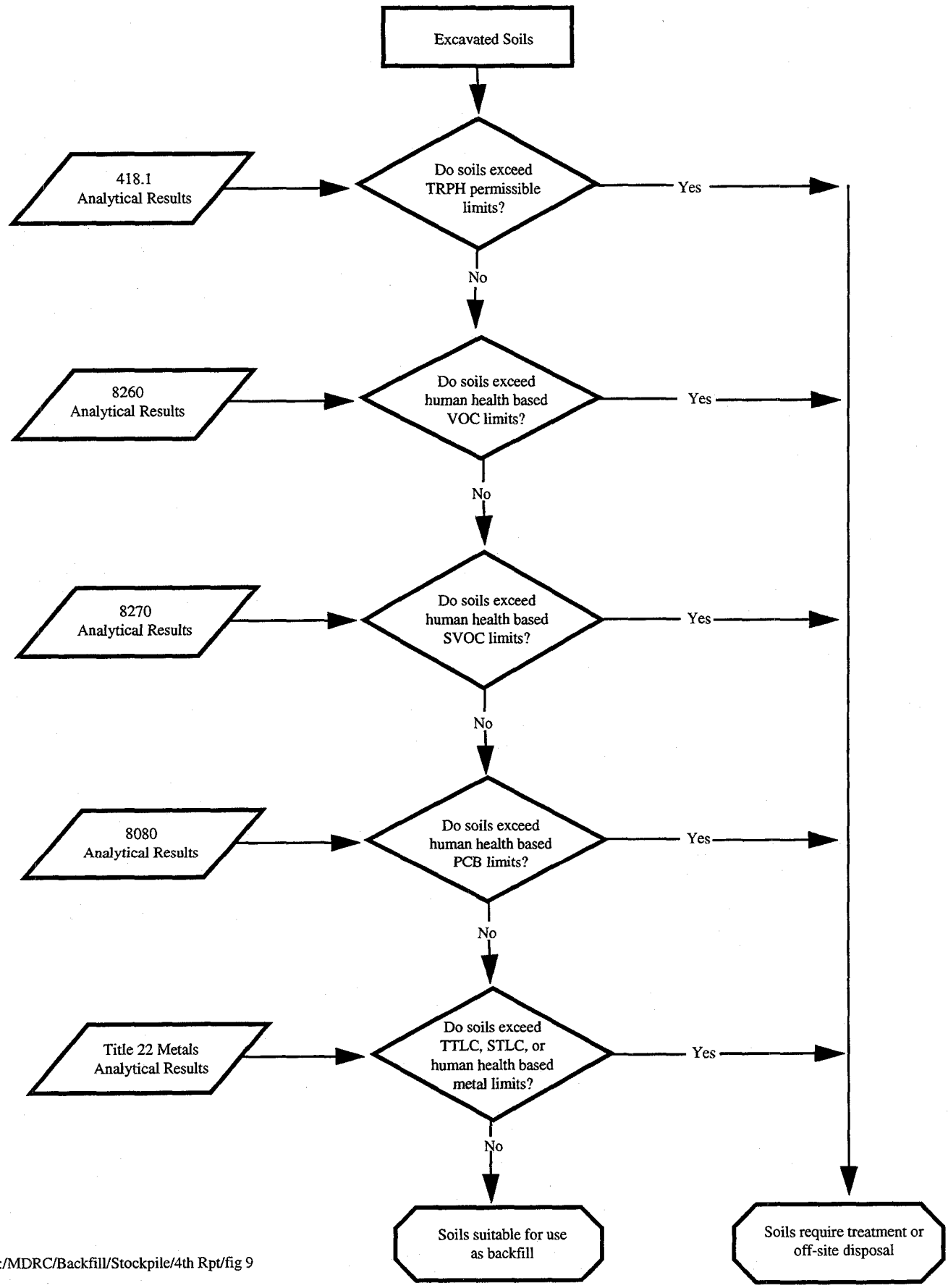
Hot Spot and Confirmation Sample Locations

FIGURE 8

BOE-C6-0061487

FIGURE 9
Soil Screening Evaluation Process



g:/MDRC/Backfill/Stockpile/4th Rpt/fig 9

Tables

MONTGOMERY WATSON

TABLE 1

Summary of Soil Sample Analytical Methods

Sample Type	EPA Method	Analyte
Hot Spot Sample	418.1	TRPH (a)
	6000/7000	Metals
	8260	VOCs
	8270	SVOCs
	8080	PCBs
	8015M	Fuel Characterization
Stockpile Sample	418.1	TRPH (a)
	6000/7000	Metals
	8260	VOCs
	8270	SVOCs
	8080	PCBs (b)
Confirmation Sample	418.1	TRPH (a)
	6000/7000	Metals
	8260	VOCs (c)
	8270	SVOCs (c)
	8080	PCBs
	8015M	Fuel Characterization (c)

Notes:
TRPH Total Recoverable Petroleum Hydrocarbons
VOCs Volatile Organic Compounds
SVOCs Semi-volatile Organic Compounds.
PCBs Polychlorinated Biphenyls
(a) Samples exhibiting TRPH concentration greater than 10,000 mg/kg were submitted for carbon chain analysis.
(b) One sample per remedial excavation.
(c) Samples were selectively submitted for these analyses.

TABLE 2
Analytical Data Summary
Remedial Excavation OA1-RE-1 Hot Spot Sample

Analyte	EPA Method	Sample Number, Collection Date, Grid Location and Depth PL-GS-1-2.5' 6/3/97 A.8/A.9-41.5 @ 2.5' bgs*	Regulatory Levels TTLC (mg/kg)	 STLC (mg/L)
TRPH (mg/kg)	418.1	16,000		
TPHd (mg/kg)	8015M	38,000		
TPHg (mg/kg)	8015M	100		
Title 22 Metals (mg/kg)				
Antimony	6010	<5.0	500	15
Arsenic	6010	<1.0	500	5
Barium	6010	96	10,000	100
Beryllium	6010	<0.1	75	0.75
Cadmium	6010	1.4	100	1
Chromium (VI)	7196	<0.5	500	5
Chromium (total)	6010	250 (2)	2,500	5
Cobalt	6010	6.0	8,000	80
Copper	6010	28	2,500	25
Lead (total)	6010	290 (3) #	1,000	5
Mercury	7471	<0.01	20	0.2
Molybdenum	6010	<0.5	3,500	350
Nickel	6010	15	2,000	20
Selenium	6010	<1.0	100	1
Silver	6010	<0.1	500	5
Thallium	6010	<5.0	700	7
Vanadium	6010	28	2,400	24
Zinc	6010	94	5,000	250
VOCs (1) (mg/kg)				
Ethylbenzene	8260	0.270		
Total Xylenes	8260	0.140		
Isopropylbenzene	8260	0.100		
n-Propylbenzene	8260	0.190		
1,3,5-Trimethylbenzene	8260	0.210		
1,2,4-Trimethylbenzene	8260	0.350		
sec-Butylbenzene	8260	0.130		
Naphthalene	8260	1.300		
SVOCs (1) (mg/kg)				
Acenaphthene	8270	2.100		
Anthracene	8270	5.600		
Benzo (a) Anthracene	8270	15.000 #		
Benzo (b) Fluoranthene	8270	23.000 #		
Benzo (k) Fluoranthene	8270	7.200		
Benzo (a) Pyrene	8270	13.000 #		
Benzo (g,h,i) Perylene	8270	10.000		
Chrysene	8270	30.000		
Fluoranthene	8270	30.000		
Fluorene	8270	5.600		
Indeno (1,2,3-cd)Pyrene	8270	6.300		
2-Methylnaphthalene	8270	8.200		
Naphthalene	8270	1.400		
Phenanthrene	8270	36.000		
Pyrene	8270	72.000		
Carbon Chain Range (mg/kg)				
Up to and including C12	8015m	1,500		
C13-C22	8015m	31,000 #		
C23 and higher	8015m	7,900		
PCBs (mg/kg)	8080	ND		

mg/kg = milligrams per kilogram
mg/L = milligrams per liter
-- = not analyzed
sim.dist. = simulated distillation
ND = not detected
VOCs = Volatile Organic Compounds
SVOCs = Semi-volatile Organic Compounds
PCBs = Polychlorinated Biphenyls
bgs = below ground surface
# = Exceeds Screening Level

TRPH = Total Recoverable Petroleum Hydrocarbons
TPHd = Total Petroleum Hydrocarbons as diesel
TPHg = Total Petroleum Hydrocarbons as gasoline
TTLC = California Total Threshold Limit Concentration
STLC = California Soluble Threshold Limit Concentration
(1) VOCs and SVOCs not listed were not detected
(2) Waste Extraction Test performed on this sample. Result was 4.5 mg/L.
(3) Waste Extraction Test performed on this sample. Result was 1.8 mg/L.

* Refer to Figure 8 for sample location

TABLE 3
Analytical Data Summary
Remedial Excavation OA1-RE-1 Stockpile Samples*

Analyte	EPA Method	Sample Number and Collection Date: OA1-RE1-SP1 7/15/97	OA1-RE1-SP2 7/15/97	OA1-RE1-SP3 7/15/97	OA1-RE1-SP4 7/15/97	OA1-RE1-SP5 7/15/97	Regulatory Levels: TTLC (mg/kg)	STLC (mg/L)
TRPH (mg/kg)	418.1	2,100	1,000	<8.0	14	700		
Title 22 Metals (mg/kg)								
Antimony	6010	<5.0	<5.0	<5.0	<5.0	<5.0	**500**	**15**
Arsenic	6010	<1.0	<1.0	<1.0	<1.0	9.6	**500**	**5**
Barium	6010	100	110	80	110	84	**10,000**	**100**
Beryllium	6010	<0.1	<0.1	<0.1	<0.1	<0.1	**75**	**0.75**
Cadmium	6010	<0.1	<0.1	<0.1	<0.1	<0.1	**100**	**1**
Chromium (VI)	7196	<0.5	<0.5	<0.5	<0.5	<0.5	**500**	**5**
Chromium (total)	6010	**80** (2)(3)	**87** (6)(7)	18	24	**130** (10)(11)	**2,500**	**5**
Cobalt	6010	7.4	7.3	5.9	7.6	7.9	**8,000**	**80**
Copper	6010	12	14	9.9	9.8	25	**2,500**	**25**
Lead (total)	6010	**190** (4)(5) #	**220** (8)(9) #	<1.0	<1.0	48	**1,000**	**5**
Mercury	7471	<0.01	<0.01	<0.01	<0.01	<0.01	**20**	**0.2**
Molybdenum	6010	<0.5	<0.5	<0.5	<0.5	<0.5	**3,500**	**350**
Nickel	6010	11	12	6.9	10	16	**2,000**	**20**
Selenium	6010	<1.0	<1.0	<1.0	<1.0	<1.0	**100**	**1**
Silver	6010	<0.1	<0.1	<0.1	<0.1	<0.1	**500**	**5**
Thallium	6010	<5.0	<5.0	<5.0	<5.0	<5.0	**700**	**7**
Vanadium	6010	33	34	25	32	63	**2,400**	**24**
Zinc	6010	44	60	26	35	200	**5,000**	**250**
VOCs (1) (mg/kg)								
Ethylbenzene	8260	<0.025	<0.025	<0.0025	<0.0025	<0.0025		
Total Xylenes	8260	<0.025	<0.025	<0.0025	<0.0025	0.0091		
n-Propylbenzene	8260	<0.025	<0.025	<0.0025	<0.0025	0.0029		
1,3,5-Trimethylbenzene	8260	0.130	0.044	<0.0025	<0.0025	0.021		
1,2,4-Trimethylbenzene	8260	0.160	0.110	<0.0025	<0.0025	0.063		
n-Butylbenzene	8260	0.031	0.040	<0.0025	<0.0025	0.0039		
Naphthalene	8260	0.100	1.000	<0.0025	<0.0025	0.230		
SVOCs (1) (mg/kg)								
Acenaphthene	8270	2.900	0.620	<0.100	<0.100	0.260		
Anthracene	8270	1.700	1.800	<0.100	<0.100	0.230		
Benzo (a) Anthracene	8270	72.000 #	5.100	<0.100	<0.100	0.370		
Benzo (b) Fluoranthene	8270	76.000 #	6.200	<0.250	<0.250	0.550		
Benzo (k) Fluoranthene	8270	33.000 #	2.200	<0.250	<0.250	<0.250		
Benzo (a) Pyrene	8270	40.000 #	3.700 #	<0.250	<0.250	0.330		
Benzo (g,h,i) Perylene	8270	28.000	3.000	<0.250	<0.250	<0.250		
4-Chlorophenyl phenyl ether	8270	<2.000	<0.200	<0.100	<0.100	<0.100		
Chrysene	8270	200.000 #	9.900	<0.100	<0.100	0.800		
Dibenz (a,h) Anthracene	8270	9.700 #	1.000	<0.100	<0.100	<0.100		
bis (2-Ethylhexyl)Phthalate	8270	<2.000	<0.200	<0.100	<0.100	0.320		
Fluoranthene	8270	180.000	9.900	<0.100	<0.100	1.200		
Fluorene	8270	11.000	1.700	<0.100	<0.100	<0.100		
Indeno (1,2,3-cd)Pyrene	8270	19.000 #	1.900	<0.250	<0.250	<0.250		
2-Methylnaphthalene	8270	85.000	8.600	<0.100	<0.100	0.300		
Naphthalene	8270	18.000	1.000	<0.100	<0.100	0.170		
Phenanthrene	8270	95.000	12.000	<0.100	<0.100	0.910		
Pyrene	8270	220.000	20.000	<0.100	<0.100	1.700		
Carbon Chain Range (mg/kg)								
Up to and including C12	8015m	--	--	--	--	--		
C13-C22	8015m	--	--	--	--	--		
C23 and higher	8015m	--	--	--	--	--		
PCBs (mg/kg)	8080	--	--	--	--	--		

mg/kg = milligrams per kilogram
mg/L = milligrams per liter
-- = not analyzed
VOCs = Volatile Organic Compounds
SVOCs = Semi-volatile Organic Compounds
TRPH = Total Recoverable Petroleum Hydrocarbons
PCBs = Polychlorinated biphenyls
ND = not detected
TTLC = California Total Threshold Limit Concentration
STLC = California Soluble Threshold Limit Concentration
# = Exceeds Screening Level

(1) VOCs and SVOCs not listed were not detected
(2) Waste Extraction Test performed on this sample. Result was 0.27 mg/L.
(3) TCLP analysis performed on this sample. Result was <0.1 mg/L.
(4) Waste Extraction Test performed on this sample. Result was <1.0 mg/L.
(5) TCLP analysis performed on this sample. Result was <1.0 mg/L.
(6) Waste Extraction Test performed on this sample. Result was 1.8 mg/L.
(7) TCLP analysis performed on this sample. Result was 0.13 mg/L.
(8) Waste Extraction Test performed on this sample. Result was 4.5 mg/L.
(9) TCLP analysis performed on this sample. Result was <1.0 mg/L.
(10) Waste Extraction Test performed on this sample. Result was 0.52 mg/L.
(11) TCLP analysis performed on this sample. Result was <0.1 mg/L.

* Refer to Figure 4 for sample locations

TABLE 3
Analytical Data Summary
Remedial Excavation OA1-RE-1 Stockpile Samples*

Analyte	EPA Method	Sample Number and Collection Date OA1-RE1-SP6 7/15/97	OA1-RE1-SP7 7/15/97	OA1-RE1-SP8 7/15/97	OA1-RE1-SP9 7/16/97	OA1-RE1-SP10 7/16/97	Regulatory Levels TTLC (mg/kg)	STLC (mg/L)
TRPH (mg/kg)	418.1	85	3,100	140	700	13,000		
Title 22 Metals (mg/kg)								
Antimony	6010	<5.0	<5.0	<5.0	<5.0	<5.0	**500**	**15**
Arsenic	6010	<1.0	<1.0	<1.0	<1.0	<1.0	**500**	**5**
Barium	6010	96	110	120	110	95	**10,000**	**100**
Beryllium	6010	<0.1	<0.1	<0.1	<0.1	<0.1	**75**	**0.75**
Cadmium	6010	<0.1	<0.1	<0.1	<0.1	<0.1	**100**	**1**
Chromium (VI)	7196	<0.5	<0.5	<0.5	<0.5	<0.5	**500**	**5**
Chromium (total)	6010	25	**110** (2)(3)	30	31	38	**2,500**	**5**
Cobalt	6010	7.0	7.0	7.9	8.3	6.6	**8,000**	**80**
Copper	6010	12	20	14	12	11	**2,500**	**25**
Lead (total)	6010	<1.0	14	<1.0	<1.0	21	**1,000**	**5**
Mercury	7471	<0.01	<0.01	<0.01	<0.01	<0.01	**20**	**0.2**
Molybdenum	6010	<0.5	<0.5	<0.5	<0.5	<0.5	**3,500**	**350**
Nickel	6010	9.8	13	15	13	11	**2,000**	**20**
Selenium	6010	<1.0	<1.0	<1.0	<1.0	<1.0	**100**	**1**
Silver	6010	<0.1	<0.1	<0.1	<0.1	<0.1	**500**	**5**
Thallium	6010	<5.0	<5.0	<5.0	<5.0	<5.0	**700**	**7**
Vanadium	6010	29	36	36	36	28	**2,400**	**24**
Zinc	6010	34	65	44	45	41	**5,000**	**250**
VOCs (1) (mg/kg)								
Ethylbenzene	8260	0.013	1.700	<0.050	<0.025	<0.0025		
Total Xylenes	8260	0.020	13.000	<0.050	<0.025	<0.0025		
n-Propylbenzene	8260	0.012	0.920	<0.050	0.063	<0.0025		
1,3,5-Trimethylbenzene	8260	0.058	9.600	<0.050	<0.025	0.110		
1,2,4-Trimethylbenzene	8260	0.240	23.000	0.160	0.110	<0.0025		
n-Butylbenzene	8260	0.017	1.100	<0.050	0.110	<0.0025		
Naphthalene	8260	0.860	64.000	2.500	4.300	0.860		
SVOCs (1) (mg/kg)								
Acenaphthene	8270	<0.100	3.500	0.350	0.890	4.300		
Anthracene	8270	0.200	7.500	0.640	1.900	11.000		
Benzo (a) Anthracene	8270	0.560	14.000 #	1.000	2.800	26.000 #		
Benzo (b) Fluoranthene	8270	0.780	12.000 #	0.360	2.100	28.000 #		
Benzo (k) Fluoranthene	8270	<0.250	<5.000	<0.250	0.790	12.000 #		
Benzo (a) Pyrene	8270	0.450	<5.000	0.830	2.800 #	22.000 #		
Benzo (g,h,i) Perylene	8270	0.440	10.000	0.530	2.000	14.000		
4-Chlorophenyl phenyl ether	8270	<0.100	<2.000	<0.100	<0.100	<2.000		
Chrysene	8270	1.000	31.000	1.400	3.700	48.000		
Dibenz (a,h) Anthracene	8270	<0.100	<2.000	<0.100	<0.100	<2.000		
bis (2-Ethylhexyl)Phthalate	8270	<0.100	<2.000	<0.100	<0.100	<2.000		
Fluoranthene	8270	1.300	18.000	0.590	2.500	53.000		
Fluorene	8270	0.200	10.000	0.840	1.600	13.000		
Indeno (1,2,3-cd)Pyrene	8270	0.260	<5.000	<0.250	0.980	6.800		
2-Methylnaphthalene	8270	1.600	160.000	1.200	31.000	160.000		
Naphthalene	8270	0.450	41.000	3.200	6.800	41.000		
Phenanthrene	8270	1.400	59.000	5.400	14.000	80.000		
Pyrene	8270	1.600	55.000	4.500	13.000	120.000		
Carbon Chain Range (mg/kg)								
Up to and including C12	8015m	--	--	--	--	480		
C13-C22	8015m	--	--	--	--	7,600		
C23 and higher	8015m	--	--	--	--	2,100		
PCBs (mg/kg)	8080	--	--	--	--	ND		

mg/kg = milligrams per kilogram
mg/L = milligrams per liter
-- = not analyzed
ND = not detected
# = Exceeds Screening Level

VOCs = Volatile Organic Compounds
SVOCs = Semi-volatile Organic Compounds
TRPH = Total Recoverable Petroleum Hydrocarbons
PCBs = Polychlorinated biphenyls

TTLC = California Total Threshold Limit Concentration
STLC = California Soluble Threshold Limit Concentration
(1) VOCs and SVOCs not listed were not detected
(2) Waste Extraction Test performed on this sample. Result was 0.56 mg/L.
(3) TCLP analysis performed on this sample. Result was <0.1 mg/L.

* Refer to Figure 4 for sample locations

TABLE 4
Analytical Data Summary
Remedial Excavation OA1-RE-2 Hot Spot Sample

Analyte	EPA Method	Sample Number, Collection Date, Grid Location and Depth PL-GS-2-2.5' 6/3/97 A.8/A.9-40 @ 2.5' bgs*	Regulatory Levels TTLC (mg/kg)	 STLC (mg/L)
TRPH (mg/kg)	418.1	15,000		
TPHd (mg/kg)	8015M	37,000		
TPHg (mg/kg)	8015M	320		
Title 22 Metals (mg/kg)				
Antimony	6010	<5.0	500	15
Arsenic	6010	<1.0	500	5
Barium	6010	86	10,000	100
Beryllium	6010	<0.1	75	0.75
Cadmium	6010	<0.1	100	1
Chromium (VI)	7196	<0.5	500	5
Chromium (total)	6010	24	2,500	5
Cobalt	6010	6.1	8,000	80
Copper	6010	12	2,500	25
Lead (total)	6010	<1.0	1,000	5
Mercury	7471	<0.01	20	0.2
Molybdenum	6010	<0.5	3,500	350
Nickel	6010	8.5	2,000	20
Selenium	6010	<1.0	100	1
Silver	6010	<0.1	500	5
Thallium	6010	<5.0	700	7
Vanadium	6010	25	2,400	24
Zinc	6010	35	5,000	250
VOCs (1) (mg/kg)				
Ethylbenzene	8260	1.700		
Total Xylenes	8260	3.700		
n-Propylbenzene	8260	1.300		
1,3,5-Trimethylbenzene	8260	7.800		
tert-Butylbenzene	8260	2.700		
1,2,4-Trimethylbenzene	8260	24.000		
Naphthalene	8260	63.000		
SVOCs (1) (mg/kg)				
Acenaphthene	8270	6.700		
Anthracene	8270	13.000		
Benzo (a) Anthracene	8270	20.000 #		
Benzo (b) Fluoranthene	8270	30.000 #		
Benzo (k) Fluoranthene	8270	9.600		
Benzo (a) Pyrene	8270	23.000 #		
Benzo (g,h,i) Perylene	8270	13.000		
Chrysene	8270	40.000		
Fluoranthene	8270	29.000		
Fluorene	8270	18.000		
Indeno (1,2,3-cd)Pyrene	8270	8.400		
2-Methylnaphthalene	8270	220.000		
Naphthalene	8270	40.000		
Phenanthrene	8270	82.000		
Pyrene	8270	71.000		
Carbon Chain Range (mg/kg)				
Up to and including C12	8015m	2,100 #		
C13-C22	8015m	30,000 #		
C23 and higher	8015m	6,100		
PCBs (mg/kg)	8080	ND		

mg/kg = milligrams per kilogram
mg/L = milligrams per liter
-- = not analyzed
sim.dist. = simulated distillation
ND = not detected
VOCs = Volatile Organic Compounds
SVOCs = Semi-volatile Organic Compounds
PCBs = Polychlorinated Biphenyls
# = Exceeds Screening Level

TRPH = Total Recoverable Petroleum Hydrocarbons
TPHd = Total Petroleum Hydrocarbons as diesel
TPHg = Total Petroleum Hydrocarbons as gasoline
TTLC = California Total Threshold Limit Concentration
STLC = California Soluble Threshold Limit Concentration
(1) VOCs and SVOCs not listed were not detected
bgs = below ground surface

* Refer to Figure 8 for sample location

TABLE 5
Analytical Data Summary
Remedial Excavation OA1-RE-2 Stockpile Samples*

		Sample Number and Collection Date							
Analyte	EPA Method	OA1-RE2-SP1A 7/16/97	OA1-RE2-SP1B 7/16/97	OA1-RE2-SP2 7/16/97	OA1-RE2-SP3 7/16/97	OA1-RE2-SP4 7/17/97	OA1-RE2-SP5 7/17/97	Regulatory Levels TTLC (mg/kg)	Regulatory Levels STLC (mg/L)
TRPH (mg/kg)	418.1	8,300	83	120	240	14,000	16,000		
Title 22 Metals (mg/kg)									
Antimony	6010	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**500**	**15**
Arsenic	6010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**500**	**5**
Barium	6010	81	110	95	77	110	81	**10,000**	**100**
Beryllium	6010	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	**75**	**0.75**
Cadmium	6010	<0.1	<0.1	<0.1	<0.1	1.8	<0.1	**100**	**1**
Chromium (VI)	7196	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**500**	**5**
Chromium (total)	6010	43	29	27	21	27	**140** (2)(3)	**2,500**	**5**
Cobalt	6010	5.9	8.1	7.2	6.1	6.7	5.4	**8,000**	**80**
Copper	6010	9.6	11	11	9.5	17	11	**2,500**	**25**
Lead (total)	6010	4.2	5.0	<1.0	<1.0	30	**150** (4)(5) #	**1,000**	**5**
Mercury	7471	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**20**	**0.2**
Molybdenum	6010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**3,500**	**350**
Nickel	6010	8.6	14	10	7.5	22	11	**2,000**	**20**
Selenium	6010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**100**	**1**
Silver	6010	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	**500**	**5**
Thallium	6010	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**700**	**7**
Vanadium	6010	25	27	31	25	41	25	**2,400**	**24**
Zinc	6010	29	48	40	28	64	44	**5,000**	**250**
VOCs (1) (mg/kg)									
Ethylbenzene	8260	2.500	<0.0025	<0.025	<0.0050	<0.050	1.300		
Total Xylenes	8260	4.200	<0.0025	<0.025	<0.0050	0.170	8.600		
n-Propylbenzene	8260	1.600	<0.0025	<0.025	<0.0050	<0.050	0.920		
1,3,5-Trimethylbenzene	8260	0.580	<0.0025	<0.025	0.026	0.210	7.600		
1,2,4-Trimethylbenzene	8260	36.000	<0.0025	0.039	0.054	0.490	21.000		
n-Butylbenzene	8260	2.700	<0.0025	<0.025	0.0083	<0.050	1.700		
Naphthalene	8260	110.000	0.017	0.930	0.260	2.200	67.000		
SVOCs (1) (mg/kg)									
Acenaphthene	8270	6.200	<0.100	<0.100	<2.000	6.200	3.800		
Anthracene	8270	16.000	0.160	0.200	16.000	17.000	14.000		
Benzo (a) Anthracene	8270	43.000 #	0.790	0.370	62.000 #	79.000 #	55.000 #		
Benzo (b) Fluoranthene	8270	55.000 #	1.200	0.330	64.000 #	110.000 #	78.000 #		
Benzo (k) Fluoranthene	8270	19.000 #	<0.250	<0.250	25.000 #	33.000 #	18.000 #		
Benzo (a) Pyrene	8270	40.000 #	0.570	0.370	32.000 #	57.000 #	39.000 #		
Benzo (g,h,i) Perylene	8270	26.000	0.420	0.250	18.000	44.000	28.000		
Chrysene	8270	64.000	2.100	0.680	63.000	190.000 #	79.000		
Dibenz (a,h) Anthracene	8270	6.200 #	<0.100	<0.100	5.800 #	12.000 #	7.300 #		
Dibenzofuran	8270	<2.000	<0.100	<0.100	4.100	<2.000	<2.000		
Fluoranthene	8270	95.000	1.700	0.550	180.000	140.000	130.000		
Fluorene	8270	19.000	<0.100	0.190	12.000	17.000	12.000		
Indeno (1,2,3-cd)Pyrene	8270	15.000 #	0.300	<0.250	15.000 #	30.000 #	18.000 #		
2-Methylnaphthalene	8270	300.000	0.430	2.200	5.000	180.000	170.000		
Naphthalene	8270	87.000	<0.100	0.360	<2.000	42.000	45.000		
Phenanthrene	8270	130.000	0.970	1.500	120.000	110.000	88.000		
Pyrene	8270	200.000	2.200	1.800	170.000	260.000	190.000		
Carbon Chain Range (mg/kg)									
Up to and including C12	8015m	--	--	--	--	870	650		
C13-C22	8015m	--	--	--	--	15,000 #	10,000		
C23 and higher	8015m	--	--	--	--	5,500	2,600		
PCBs (mg/kg)	8080	--	--	--	--	--	ND		

mg/kg = milligrams per kilogram
mg/L = milligrams per liter
-- = not analyzed
VOCs = Volatile Organic Compounds
SVOCs = Semi-volatile Organic Compounds
TRPH = Total Recoverable Petroleum Hydrocarbons
PCBs = Polychlorinated biphenyls
ND = not detected
# = Exceeds Screening Level

TTLC = California Total Threshold Limit Concentration
STLC = California Soluble Threshold Limit Concentration
(1) VOCs and SVOCs not listed were not detected
(2) Waste Extraction Test performed on this sample. Result was 3.0 mg/L.
(3) TCLP analysis performed on this sample. Result was <0.1 mg/L.
(4) Waste Extraction Test performed on this sample. Result was 7.2 mg/L.
(5) TCLP analysis performed on this sample. Result was <1.0 mg/L.

* Refer to Figures 5 and 6 for sample locations

TABLE 5
Analytical Data Summary
Remedial Excavation OA1-RE-2 Stockpile Samples*

Analyte	EPA Method	Sample Number and Collection Date: OA1-RE2-SP6 7/17/97	OA1-RE2-SP7 7/17/97	OA1-RE2-SP8 7/17/97	OA1-RE2-SP9 7/18/97	OA1-RE2-SP10 7/18/97	Regulatory Levels: TTLC (mg/kg)	STLC (mg/L)
TRPH (mg/kg)	418.1	2,300	3,400	4,600	1,300	420		
Title 22 Metals (mg/kg)								
Antimony	6010	<5.0	<5.0	<5.0	<5.0	<5.0	**500**	**15**
Arsenic	6010	<1.0	<1.0	<1.0	<1.0	<1.0	**500**	**5**
Barium	6010	90	110	91	100	100	**10,000**	**100**
Beryllium	6010	<0.1	<0.1	<0.1	<0.1	<0.1	**75**	**0.75**
Cadmium	6010	1.3	<0.1	<0.1	<0.1	<0.1	**100**	**1**
Chromium (VI)	7196	<0.5	<0.5	<0.5	<0.5	<0.5	**500**	**5**
Chromium (total)	6010	29	**120** (2)(3)	49	37	25	**2,500**	**5**
Cobalt	6010	7.2	7.4	6.7	7.6	7.1	**8,000**	**80**
Copper	6010	13	11	12	16	11	**2,500**	**25**
Lead (total)	6010	9.7	**320** (4)(5) #	27	34	<1.0	**1,000**	**5**
Mercury	7471	<0.01	<0.01	<0.01	<0.01	<0.01	**20**	**0.2**
Molybdenum	6010	<0.5	<0.5	<0.5	<0.5	<0.5	**3,500**	**350**
Nickel	6010	16	12	13	14	11	**2,000**	**20**
Selenium	6010	<1.0	<1.0	<1.0	<1.0	<1.0	**100**	**1**
Silver	6010	<0.1	<0.1	<0.1	<0.1	<0.1	**500**	**5**
Thallium	6010	<5.0	<5.0	<5.0	<5.0	<5.0	**700**	**7**
Vanadium	6010	42	30	30	35	32	**2,400**	**24**
Zinc	6010	40	44	110	35	40	**5,000**	**250**
VOCs (1) (mg/kg)								
Ethylbenzene	8260	0.390	0.670	<0.050	<0.0025	<0.0025		
Total Xylenes	8260	1.500	1.100	0.150	<0.0025	0.0052		
n-Propylbenzene	8260	0.220	0.590	<0.050	<0.0025	<0.0025		
1,3,5-Trimethylbenzene	8260	2.000	2.900	0.330	<0.0025	0.0085		
1,2,4-Trimethylbenzene	8260	6.200	10.000	0.970	0.0039	0.029		
n-Butylbenzene	8260	0.340	0.900	0.120	<0.005	<0.005		
Naphthalene	8260	17.000	41.000	5.500	0.023	0.110		
SVOCs (1) (mg/kg)								
Acenaphthene	8270	<60.000	2.700	1.100	<0.400	<0.200		
Anthracene	8270	270.000	7.100	3.000	3.000	0.940		
Benzo (a) Anthracene	8270	1300.000 #	18.000 #	8.300	20.000 #	5.500		
Benzo (b) Fluoranthene	8270	1900.000 #	22.000 #	14.000 #	39.000 #	8.800		
Benzo (k) Fluoranthene	8270	430.000 #	7.400	4.000	11.000	2.000		
Benzo (a) Pyrene	8270	760.000 #	16.000 #	7.900 #	17.000 #	3.600 #		
Benzo (g,h,i) Perylene	8270	470.000	12.000	6.000	18.000	4.000		
Chrysene	8270	1,500.000 #	2.300	15.000	46.000	13.000		
Dibenz (a,h) Anthracene	8270	160.000 #	<2.000	1.300	4.700 #	1.100		
Dibenzofuran	8270	<60.000	<2.000	<0.400	<0.400	<0.200		
Fluoranthene	8270	4,000.000	42.000	16.000	46.000	13.000		
Fluorene	8270	110.000	8.100	3.400	<0.400	0.230		
Indeno (1,2,3-cd)Pyrene	8270	470.000 #	5.800	3.900	15.000 #	3.400		
2-Methylnaphthalene	8270	<60.000	130.000	40.000	<0.400	3.000		
Naphthalene	8270	<60.000	36.000	9.800	<0.400	0.770		
Phenanthrene	8270	1,800.000	54.000	21.000	12.000	3.900		
Pyrene	8270	3,600.000 #	74.000	34.000	57.000	12.000		
Carbon Chain Range (mg/kg)								
Up to and including C12	8015m	--	--	--	--	--		
C13-C22	8015m	--	--	--	--	--		
C23 and higher	8015m	--	--	--	--	--		
PCBs (mg/kg)	8080	--	--	--	--	--		

mg/kg = milligrams per kilogram
mg/L = milligrams per liter
-- = not analyzed
VOCs = Volatile Organic Compounds
SVOCs = Semi-volatile Organic Compounds
TRPH = Total Recoverable Petroleum Hydrocarbons
PCBs = Polychlorinated biphenyls
ND = not detected
# = Exceeds Screening Level

TTLC = California Total Threshold Limit Concentration
STLC = California Soluble Threshold Limit Concentration
(1) VOCs and SVOCs not listed were not detected
(2) Waste Extraction Test performed on this sample. Result was 2.3 mg/L.
(3) TCLP analysis performed on this sample. Result was <0.1 mg/L.
(4) Waste Extraction Test performed on this sample. Result was 6.0 mg/L.
(5) TCLP analysis performed on this sample. Result was <1.0 mg/L.

* Refer to Figures 5 and 6 for sample locations

TABLE 6
Analytical Data Summary
Remedial Excavation OA1-RE-2 Confirmation Sample

Analyte	EPA Method	Sample Number, Collection Date, Grid Location and Depth RR-GS-37-4' 6/5/97 A.10-40 @ 4' bgs*	Regulatory Levels TTLC (mg/kg)	 STLC (mg/L)
TRPH (mg/kg)	418.1	<8.0		
TPHd (mg/kg)	8015M	<8.0		
TPHg (mg/kg)	8015M	<5.0		
Title 22 Metals (mg/kg)				
Antimony	6010	<5.0	500	15
Arsenic	6010	<1.0	500	5
Barium	6010	99	10,000	100
Beryllium	6010	<0.1	75	0.75
Cadmium	6010	<0.1	100	1
Chromium (VI)	7196	<0.5	500	5
Chromium (total)	6010	25	2,500	5
Cobalt	6010	6.8	8,000	80
Copper	6010	9.5	2,500	25
Lead (total)	6010	<1.0	1,000	5
Mercury	7471	<0.01	20	0.2
Molybdenum	6010	<0.5	3,500	350
Nickel	6010	10	2,000	20
Selenium	6010	<1.0	100	1
Silver	6010	<0.1	500	5
Thallium	6010	<5.0	700	7
Vanadium	6010	28	2,400	24
Zinc	6010	32	5,000	250
VOCs (mg/kg)	8260	ND		
SVOCs (mg/kg)	8270	ND		
Carbon Chain Range (mg/kg)	8015m	ND		
PCBs (mg/kg)	8080	ND		

mg/kg = milligrams per kilogram
mg/L = milligrams per liter
-- = *not analyzed*
sim.dist. = simulated distillation
ND = not detected
VOCs = Volatile Organic Compounds
SVOCs = Semi-volatile Organic Compounds

TRPH = Total Recoverable Petroleum Hydrocarbons
TPHd = Total Petroleum Hydrocarbons as diesel
TPHg = Total Petroleum Hydrocarbons as gasoline
TTLC = California Total Threshold Limit Concentration
STLC = California Soluble Threshold Limit Concentration
bgs = below ground surface
PCBs = Polychlorinated Biphenyls

* Refer to Figure 8 for sample location

TABLE 7
Analytical Data Summary
Remedial Excavation OA1-RE-3 Stockpile Samples*

Analyte	EPA Method	Sample Number and Collection Date: OA1-RE3-SP1 7/18/97	OA1-RE3-SP2 7/18/97	OA1-RE3-SP3 7/18/97	OA1-RE3-SP4 7/18/97	OA1-RE3-SP5 7/21/97	Regulatory Levels: TTLC (mg/kg)	STLC (mg/L)
TRPH (mg/kg)	418.1	48	1,500	1,700	170	47		
Title 22 Metals (mg/kg)								
Antimony	6010	<5.0	<5.0	<5.0	<5.0	<5.0	**500**	**15**
Arsenic	6010	<1.0	<1.0	<1.0	<1.0	<1.0	**500**	**5**
Barium	6010	110	120	110	110	110	**10,000**	**100**
Beryllium	6010	<0.1	<0.1	<0.1	<0.1	<0.1	**75**	**0.75**
Cadmium	6010	<0.1	<0.1	<0.1	<0.1	<0.1	**100**	**1**
Chromium (VI)	7196	<0.5	<0.5	<0.5	<0.5	<0.5	**500**	**5**
Chromium (total)	6010	30	28	25	30	43	**2,500**	**5**
Cobalt	6010	7.2	7.8	7.3	7.7	7.7	**8,000**	**80**
Copper	6010	13	12	12	12	14	**2,500**	**25**
Lead (total)	6010	<1.0	<1.0	<1.0	<1.0	5.0	**1,000**	**5**
Mercury	7471	<0.01	<0.01	<0.01	<0.01	<0.01	**20**	**0.2**
Molybdenum	6010	<0.5	<0.5	<0.5	<0.5	<0.5	**3,500**	**350**
Nickel	6010	12	12	11	12	11	**2,000**	**20**
Selenium	6010	<1.0	<1.0	<1.0	<1.0	<1.0	**100**	**1**
Silver	6010	<0.1	<0.1	<0.1	<0.1	<0.1	**500**	**5**
Thallium	6010	<5.0	<5.0	<5.0	<5.0	<5.0	**700**	**7**
Vanadium	6010	35	34	34	35	28	**2,400**	**24**
Zinc	6010	46	40	40	49	79	**5,000**	**250**
VOCs (1) (mg/kg)								
Ethylbenzene	8260	<0.0025	0.300	0.130	<0.0025	<0.0025		
Tetrachloroethene	8260	<0.0025	<0.200	<0.100	<0.0025	<0.0025		
Trichloroethene	8260	<0.0025	<0.200	<0.100	<0.0025	<0.0025		
n-Propylbenzene	8260	<0.0025	0.310	<0.100	<0.0025	<0.0025		
1,3,5-Trimethylbenzene	8260	<0.0025	1.500	0.590	<0.0025	<0.0025		
1,2,4-Trimethylbenzene	8260	0.0098	2.500	1.000	<0.0025	<0.0025		
sec-Butylbenzene	8260	<0.0025	<0.200	<0.100	<0.0025	<0.0025		
p-Isopropyltoluene	8260	<0.0025	<0.200	<0.100	<0.0025	<0.0025		
n-Butylbenzene	8260	<0.0025	0.420	0.260	<0.0025	<0.0025		
Naphthalene	8260	0.110	20.000	14.000	<0.0025	<0.0025		
SVOCs (1) (mg/kg)								
Acenaphthene	8270	<0.100	1.400	1.200	<0.100	<0.100		
Anthracene	8270	<0.100	3.200	2.600	0.110	0.660		
Benzo (a) Anthracene	8270	0.360	6.300	4.000	0.470	2.200		
Benzo (b) Fluoranthene	8270	0.780	7.600	4.000	1.400	2.700		
Benzo (k) Fluoranthene	8270	<0.250	1.700	1.400	0.470	0.830		
Benzo (a) Pyrene	8270	0.360	5.100 #	3.900 #	0.640	1.300 #		
Benzo (g,h,i) Perylene	8270	0.450	3.700	3.000	0.790	0.780		
Chrysene	8270	0.740	9.500	6.800	1.300	3.200		
Dibenz (a,h) Anthracene	8270	<0.100	<0.400	<0.400	<0.100	0.220		
bis (2-Ethylhexyl)Phthalate	8270	<0.100	<0.400	<0.400	<0.100	0.110		
Fluoranthene	8270	0.560	11.000	5.100	1.300	8.400		
Fluorene	8270	<0.100	3.400	2.800	0.100	0.330		
Indeno (1,2,3-cd)Pyrene	8270	0.310	2.300	1.300	0.580	0.630		
2-Methylnaphthalene	8270	0.620	45.000	52.000	0.180	<0.100		
Naphthalene	8270	0.160	14.000	14.000	<0.100	<0.100		
Phenanthrene	8270	0.400	20.000	16.000	0.570	4.300		
Pyrene	8270	0.890	18.000	20.000	1.600	7.500		
Carbon Chain Range (mg/kg)	8015m	--	--	--	--	--		
PCBs (mg/kg)	8080	--	--	ND	--	--		

mg/kg = milligrams per kilogram
mg/L = milligrams per liter
-- = not analyzed
VOCs = Volatile Organic Compounds
SVOCs = Semi-volatile Organic Compounds
TRPH = Total Recoverable Petroleum Hydrocarbons
PCBs = Polychlorinated biphenyls
ND = not detected
# = Exceeds Screening Level

TTLC = California Total Threshold Limit Concentration
STLC = California Soluble Threshold Limit Concentration
(1) VOCs and SVOCs not listed were not detected

* Refer to Figure 7 for sample locations

TABLE 7
Analytical Data Summary
Remedial Excavation OA1-RE-3 Stockpile Samples*

Analyte	EPA Method	Sample Number and Collection Date: OA1-RE3-SP6 7/21/97	OA1-RE3-SP7 7/21/97	OA1-RE3-SP8 7/21/97	OA1-RE3-SP9 7/21/97	OA1-RE3-SP10 7/21/97	Regulatory Levels: TTLC (mg/kg)	STLC (mg/L)
TRPH (mg/kg)	418.1	36	32	63	43	79		
Title 22 Metals (mg/kg)								
Antimony	6010	<5.0	<5.0	<5.0	<5.0	<5.0	500	15
Arsenic	6010	<1.0	<1.0	<1.0	<1.0	<1.0	500	5
Barium	6010	110	120	110	120	110	10,000	100
Beryllium	6010	<0.1	<0.1	<0.1	<0.1	<0.1	75	0.75
Cadmium	6010	<0.1	<0.1	<0.1	<0.1	<0.1	100	1
Chromium (VI)	7196	<0.5	<0.5	<0.5	<0.5	<0.5	500	5
Chromium (total)	6010	72 (2)(3)	36	80 (4)(5)	71 (6)(7)	63 (8)(9)	2,500	5
Cobalt	6010	7.3	7.4	6.5	7.4	7.6	8,000	80
Copper	6010	18	15	28	25	17	2,500	25
Lead (total)	6010	<1.0	<1.0	<1.0	<1.0	2.5	1,000	5
Mercury	7471	<0.01	<0.01	<0.01	<0.01	<0.01	20	0.2
Molybdenum	6010	<0.5	<0.5	<0.5	<0.5	<0.5	3,500	350
Nickel	6010	12	12	10	11	9.9	2,000	20
Selenium	6010	<1.0	<1.0	<1.0	<1.0	<1.0	100	1
Silver	6010	<0.1	<0.1	<0.1	<0.1	<0.1	500	5
Thallium	6010	<5.0	<5.0	<5.0	<5.0	<5.0	700	7
Vanadium	6010	32	32	30	30	30	2,400	24
Zinc	6010	70	53	85	80	62	5,000	250
VOCs (1) (mg/kg)								
Ethylbenzene	8260	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025		
Tetrachloroethene	8260	<0.0025	0.0030	0.0094	<0.0025	<0.0025		
Trichloroethene	8260	0.0041	<0.0025	0.0061	0.0055	0.0076		
n-Propylbenzene	8260	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025		
1,3,5-Trimethylbenzene	8260	<0.0025	<0.0025	0.0043	<0.0025	<0.0025		
1,2,4-Trimethylbenzene	8260	<0.0025	0.0034	0.012	<0.0025	<0.0025		
sec-Butylbenzene	8260	<0.0025	<0.0025	0.0029	<0.0025	<0.0025		
p-Isopropyltoluene	8260	<0.0025	<0.0025	0.0031	<0.0025	<0.0025		
n-Butylbenzene	8260	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025		
Naphthalene	8260	<0.0025	<0.0025	0.015	<0.0025	<0.0025		
SVOCs (1) (mg/kg)								
Acenaphthene	8270	<0.100	<0.100	<0.100	<0.100	<0.100		
Anthracene	8270	<0.100	<0.100	<0.100	<0.100	<0.100		
Benzo (a) Anthracene	8270	<0.100	0.120	<0.100	<0.100	<0.100		
Benzo (b) Fluoranthene	8270	<0.250	<0.250	<0.250	<0.250	<0.250		
Benzo (k) Fluoranthene	8270	<0.250	<0.250	<0.250	<0.250	<0.250		
Benzo (a) Pyrene	8270	<0.250	<0.250	<0.250	<0.250	<0.250		
Benzo (g,h,i) Perylene	8270	<0.250	<0.250	<0.250	<0.250	<0.250		
Chrysene	8270	0.210	0.220	<0.100	0.310	0.270		
Dibenz (a,h) Anthracene	8270	<0.100	<0.100	<0.100	<0.100	<0.100		
bis (2-Ethylhexyl)Phthalate	8270	<0.100	<0.100	<0.100	0.110	0.300		
Fluoranthene	8270	0.130	0.330	<0.100	<0.100	<0.100		
Fluorene	8270	<0.100	<0.100	<0.100	<0.100	<0.100		
Indeno (1,2,3-cd)Pyrene	8270	<0.250	<0.250	<0.250	<0.250	<0.250		
2-Methylnaphthalene	8270	<0.100	<0.100	<0.100	<0.100	<0.100		
Naphthalene	8270	<0.100	<0.100	<0.100	<0.100	<0.100		
Phenanthrene	8270	0.110	<0.100	<0.100	<0.100	0.230		
Pyrene	8270	0.170	0.360	<0.100	0.130	0.160		
Carbon Chain Range (mg/kg)	8015m	--	--	--	--	--		
PCBs (mg/kg)	8080	--	--	--	--	--		

mg/kg = milligrams per kilogram
mg/L = milligrams per liter
-- = not analyzed
ND = not detected
VOCs = Volatile Organic Compounds
SVOCs = Semi-volatile Organic Compounds
TRPH = Total Recoverable Petroleum Hydrocarbons
PCBs = Polychlorinated biphenyls
TTLC = California Total Threshold Limit Concentration
STLC = California Soluble Threshold Limit Concentration
# = Exceeds Screening Level

* Refer to Figure 7 for sample locations

(1) VOCs and SVOCs not listed were not detected
(2) Waste Extraction Test performed on this sample. Result was 0.54 mg/L.
(3) TCLP analysis performed on this sample. Result was <0.1 mg/L.
(4) Waste Extraction Test performed on this sample. Result was 0.78 mg/L.
(5) TCLP analysis performed on this sample. Result was <0.1 mg/L.
(6) Waste Extraction Test performed on this sample. Result was 0.83 mg/L.
(7) TCLP analysis performed on this sample. Result was <0.1 mg/L.
(8) Waste Extraction Test performed on this sample. Result was 2.6 mg/L.
(9) TCLP analysis performed on this sample. Result was <0.1 mg/L.

TABLE 8
Analytical Data Summary
Remedial Excavation OA1-RE-3 Confirmation Sample

Analyte	EPA Method	Sample Number, Collection Date, Grid Location and Depth RR-GS-35-4' 6/5/97 A.9-35 @ 4' bgs*	Regulatory Levels TTLC (mg/kg)	 STLC (mg/L)
TRPH (mg/kg)	418.1	48		
Title 22 Metals (mg/kg)				
Antimony	6010	<5.0	500	15
Arsenic	6010	<1.0	500	5
Barium	6010	98	10,000	100
Beryllium	6010	<0.1	75	0.75
Cadmium	6010	<0.1	100	1
Chromium (VI)	7196	<0.5	500	5
Chromium (total)	6010	25	2,500	5
Cobalt	6010	5.1	8,000	80
Copper	6010	10	2,500	25
Lead (total)	6010	<1.0	1,000	5
Mercury	7471	<0.01	20	0.2
Molybdenum	6010	<0.5	3,500	350
Nickel	6010	8.0	2,000	20
Selenium	6010	<1.0	100	1
Silver	6010	<0.1	500	5
Thallium	6010	<5.0	700	7
Vanadium	6010	26	2,400	24
Zinc	6010	34	5,000	250
VOCs (mg/kg)	8260	--		
SVOCs (mg/kg)	8270	--		
Carbon Chain Range (mg/kg)	8015m	--		
PCBs (mg/kg)	8080	ND		

mg/kg = milligrams per kilogram
mg/L = milligrams per liter
-- = not analyzed
sim.dist. = simulated distillation
ND = not detected
VOCs = Volatile Organic Compounds

TRPH = Total Recoverable Petroleum Hydrocarbons
TTLC = California Total Threshold Limit Concentration
STLC = California Soluble Threshold Limit Concentration
bgs = below ground surface
PCBs = Polychlorinated Biphenyls
SVOCs = Semi-volatile Organic Compounds

* Refer to Figure 8 for sample location

TABLE 9
Health-Based Remediation Goals (HBRGs) for
Organic Constituents Soil Exposure Pathways (mg/kg)

Constituent	Construction Worker Initial HBRG	Commercial/ Industrial User Initial HBRG	Final HBRG
1-butanol	1.98E+04	3.46E+04	1.98E+04
1,1-dichloroethane	2.23E+03	1.10E+03	1.10E+03
1,1-dichloroethene	1.57E+01	4.21E+00	4.21E+00
1,1,1,2-tetrachloroethane	4.98E+02	1.44E+04	4.98E+02
1,1,2-trichloroethane	2.23E+02	1.26E+03	2.23E+02
1,1,2,2-tetrachloroethane	6.25E+01	1.50E+03	6.25E+01
1,2-dibromo-3-chloropropane	2.42E+00	7.47E+01	2.42E+00
1,2-dibromoethane	4.86E+00	1.84E+02	4.86E+00
1,2-dichlorobenzene	NA	2.64E+06	2.64E+06
1,2-dichloroethane	2.06E+02	2.66E+02	2.06E+02
1,2-dichloropropane	3.37E+01	7.25E+00	7.25E+00
1,2-diphenylhydrazine	2.03E+01	2.36E+08	2.03E+01
1,2,3-trichloropropane	2.39E+00	4.08E+01	2.39E+00
1,2,4-trichlorobenzene	1.74E+02	4.74E+07	1.74E+02
1,3-dichloropropene	4.83E+01	6.63E+02	4.83E+01
1,4-dichlorobenzene	4.32E+02	4.37E+04	4.32E+02
2-butanone	3.28E+04	2.35E+06	3.28E+04
2-chlorophenol	8.57E+02	1.17E+06	8.57E+02
2-methylphenol	8.66E+03	7.59E+07	8.66E+03
2-naphthylamine	9.81E+00	1.63E+06	9.81E+00
2,4-dichlorophenol	5.21E+01	2.22E+07	5.21E+01
2,4-dimethylphenol	3.48E+03	4.37E+08	3.48E+03
2,4-dinitrophenol	3.49E+01	7.14E+09	3.49E+01
2,4-dinitrotoluene	3.48E+01	7.62E+06	3.48E+01
2,4,5-trichlorophenol	1.73E+04	2.21E+08	1.73E+04
2,4,6-trichlorophenol	2.52E+02	1.10E+07	2.52E+02
2,6-dinitrotoluene	2.59E+01	4.51E+05	2.59E+01
3,3-dichlorobenzidine	1.47E+01	7.53E+08	1.47E+01
4-chloroaniline	6.93E+01	6.50E+06	6.93E+01
4-methyl-2-pentanone	1.20E+04	6.84E+05	1.20E+04
4-methylphenol	8.69E+01	4.01E+07	8.69E+01
4,4-ddd	1.03E+02	9.97E+08	1.03E+02
4,4-dde	7.28E+01	2.83E+06	7.28E+01
4,4-ddt	1.22E+01	2.26E+08	1.22E+01
acenaphthene	8.10E+03	1.62E+08	8.10E+03
acetone	1.55E+04	4.37E+05	1.55E+04
acrolein	NA	8.05E+01	8.05E+01
acrylonitrile	1.59E+01	7.65E+01	1.59E+01

TABLE 9
Health-Based Remediation Goals (HBRGs) for
Organic Constituents Soil Exposure Pathways (mg/kg)

Constituent	Construction Worker Initial HBRG	Commercial/ Industrial User Initial HBRG	Final HBRG
aldrin	7.32E-01	2.82E+04	7.32E-01
alpha-bhc	3.93E+00	2.32E+05	3.93E+00
aniline	3.10E+03	1.02E+07	3.10E+03
anthracene	4.06E+03	1.37E+10	4.06E+03
aroclor 1016	NA	7.35E+05	7.35E+05
aroclor 1254	8.70E-01	5.69E+05	8.70E-01
benzene	1.43E+02	1.71E+02	1.43E+02
benzidine	3.52E-02	1.55E+02	3.52E-02
benzoic acid	6.96E+04	6.58E+10	6.96E+04
benzo(a)anthracene	1.14E+01	1.13E+09	1.14E+01
benzo(a)pyrene	1.14E+00	9.56E+07	1.14E+00
benzo(b)fluoranthene	1.14E+01	3.19E+08	1.14E+01
benzo(k)fluoranthene	1.14E+01	9.56E+07	1.14E+01
benzyl alcohol	1.73E+04	3.81E+08	1.73E+04
benzyl chloride	1.00E+02	4.03E+03	1.00E+02
beta-bhc	1.38E+01	9.94E+06	1.38E+01
beta-chloronaphthalene	NA	2.32E+07	2.32E+07
bis(2-chloro-1-methylethyl)ether	2.49E+02	2.93E+04	2.49E+02
bis(2-chloroethyl)ether	6.91E+00	6.91E+02	6.91E+00
bis(2-ethylhexyl)phthalate	2.10E+03	3.59E+09	2.10E+03
bromodichloromethane	1.30E+02	2.94E+03	1.30E+02
bromoform	3.34E+02	1.28E+05	3.34E+02
bromomethane	NA	1.15E+02	1.15E+02
carbazole	8.83E+02	6.66E+08	8.83E+02
carbon disulfide	1.43E+03	7.04E+04	1.43E+03
carbon tetrachloride	9.71E+01	1.35E+02	9.71E+01
chlordane	1.04E+00	1.55E+05	1.04E+00
chlorobenzene	NA	2.83E+04	2.83E+04
chloroform	1.49E+02	9.58E+02	1.49E+02
chloromethane	7.43E+02	7.40E+01	7.40E+01
chrysene	1.14E+02	5.06E+10	1.14E+02
cis-1,2-dichloroethene	1.34E+03	7.51E+03	1.34E+03
cumene	3.79E+03	5.73E+04	3.79E+03
dibenzo(a,h)anthracene	3.35E+00	6.34E+11	3.35E+00
dibromochloromethane	1.50E+02	1.54E+02	1.50E+02
dichlorodifluoromethane	2.14E+03	7.01E+02	7.01E+02
dieldrin	1.22E+00	2.33E+04	1.22E+00
diethyl phthalate	1.39E+05	6.03E+09	1.39E+05
di-n-butylphthalate	1.74E+04	4.19E+08	1.74E+04

TABLE 9
Health-Based Remediation Goals (HBRGs) for
Organic Constituents Soil Exposure Pathways (mg/kg)
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Constituent	Construction Worker Initial HBRG	Commercial/ Industrial User Initial HBRG	Final HBRG
di-n-octylphthalate	3.49E+02	1.80E+10	3.49E+02
endosulfan	1.46E+02	2.14E+08	1.46E+02
endrin	7.33E+00	1.37E+08	7.33E+00
ethyl chloride	1.42E+05	1.57E+06	1.42E+05
ethylbenzene	NA	7.33E+05	7.33E+05
fluoranthene	6.97E+03	3.03E+10	6.97E+03
fluorene	6.94E+03	1.40E+08	6.94E+03
gamma-bhc	2.32E+01	2.63E+05	2.32E+01
heptachlor	2.87E+00	1.78E+03	2.87E+00
heptachlor epoxide	3.14E-01	1.35E+03	3.14E-01
hexachlorobenzene	9.69E+00	2.80E+03	9.69E+00
hexachlorobutadiene	2.24E+02	7.13E+04	2.24E+02
hexachlorocyclopentadiene	8.87E+01	9.79E+02	8.87E+01
hexachloroethane	1.73E+02	2.39E+05	1.73E+02
indeno(1,2,3-cd)pyrene	1.47E+01	1.23E+11	1.47E+01
isobutyl alcohol	4.81E+04	2.55E+06	4.81E+04
isophorone	1.85E+04	2.92E+07	1.85E+04
methoxychlor	8.71E+01	1.48E+09	8.71E+01
methyl methacrylate	1.06E+03	5.56E+04	1.06E+03
methylene bromide	1.51E+03	2.75E+04	1.51E+03
methylene chloride	1.07E+03	1.26E+03	1.07E+03
methyl-tert-butyl ether	NA	1.39E+06	1.39E+06
n-butylbenzyl phthalate	3.48E+03	6.52E+09	3.48E+03
nitroaniline, o-	8.07E+03	2.45E+06	8.07E+03
nitrobenzene	8.61E+01	1.78E+05	8.61E+01
nitrosodiphenylamine, p-	8.02E+02	1.03E+07	8.02E+02
n-nitrosodimethylamine	2.60E-01	1.38E-02	1.38E-02
n-nitroso-di-n-propylamine	2.48E+00	4.46E+02	2.48E+00
n-nitrosodiphenylamine	1.96E+03	4.80E+09	1.96E+03
o-chlorotoluene	3.14E+03	1.05E+05	3.14E+03
p-chloro-m-cresol	3.48E+04	NA	3.48E+04
pentachlorophenol	3.04E+02	3.09E+07	3.04E+02
phenol	1.04E+04	3.14E+09	1.04E+04
pyrene	2.35E+03	4.11E+10	2.35E+03
styrene	3.02E+05	7.58E+06	3.02E+05
tetrachloroethene	3.36E+02	7.52E+03	3.36E+02
toluene	3.12E+04	2.41E+05	3.12E+04
toxaphene	1.47E+01	9.16E+04	1.47E+01
trans-1,2-dichloroethene	2.68E+03	1.47E+04	2.68E+03

TABLE 9
Health-Based Remediation Goals (HBRGs) for
Organic Constituents Soil Exposure Pathways (mg/kg)
Page 4 of 5

Constituent	Construction Worker Initial HBRG	Commercial/ Industrial User Initial HBRG	Final HBRG
trichloroethene	1.05E+03	1.39E+03	1.05E+03
trichlorofluoromethane	1.03E+04	4.89E+04	1.03E+04
vinyl acetate	5.41E+03	2.31E+05	5.41E+03
vinyl chloride	5.16E+00	1.81E-01	1.81E-01
xylenes	3.26E+04	2.61E+07	3.26E+04

TABLE 9
Health-Based Remediation Goals (HBRGs) for
Inorganic Constituents Soil Exposure Pathways (mg/kg)

Compound	Initial HBRG	ILM Background*	Final HBRG
aluminum	NT	3.63E+04	3.63E+04
antimony	9.05E+00	5.00E+00	9.05E+00
arsenic	8.87E+00	1.40E+01	1.40E+01
barium	2.52E+03	2.81E+02	2.52E+03
beryllium	1.56E+01	7.40E-01	1.56E+01
cadmium	1.64E+01	8.80E-01	1.64E+01
calcium	NT	3.80E+04	3.80E+04
chromium iii	3.22E+04	4.10E+01	3.22E+04
chromium vi	9.73E+01	NA	9.73E+01
cobalt	NT	2.00E+01	2.00E+01
copper	1.26E+03	5.30E+01	1.26E+03
cyanide	6.99E+02	NA	6.99E+02
iron	NT	6.05E+04	6.05E+04
lead	NT	1.11E+02	1.11E+02
mercury	6.78E+00	2.80E-01	6.78E+00
molybdenum	1.24E+03	2.30E+01	1.24E+03
nickel	2.39E+02	2.90E+01	2.39E+02
potassium	NT	8.26E+03	8.26E+03
selenium	1.82E+02	1.24E+03	1.24E+03
silver	1.30E+02	2.39E+02	2.39E+02
sodium	NT	1.96E+03	1.96E+03
thallium	NT	1.10E+01	1.10E+01
titanium	NT	1.95E+03	1.95E+03
vanadium	8.37E+01	8.20E+01	8.37E+01
zinc	8.73E+03	1.98E+02	8.73E+03

NOTES:

*ILM background values provided in Baseline Risk Assessment (G&M 1996).
NT = No Toxicity values available for calculation of HBRG
NA = Not Available.

TABLE 10
Open Area No. 1 Remedial Excavations OA1-RE-1 through OA1-RE-3
Stockpile Sample Reference

Stockpile	Sample ID	Treatment or Off-Site Disposal	Non-RCRA Haz Waste
OA1-RE1-A	OA1-RE1-SP1	X	
OA1-RE1-B	OA1-RE1-SP2	X	
OA1-RE1-C	OA1-RE1-SP3		
OA1-RE1-D	OA1-RE1-SP4		
OA1-RE1-E	OA1-RE1-SP5		
OA1-RE1-F	OA1-RE1-SP6		
OA1-RE1-G	OA1-RE1-SP7	X	
OA1-RE1-H	OA1-RE1-SP8		
OA1-RE1-I	OA1-RE1-SP9	X	
OA1-RE1-J	OA1-RE1-SP10	X	
	PL-GS-1-2.5'	X	
OA1-RE2-A1/A2	OA1-RE2-SP1A	X	
	OA1-RE2-SP1B		
OA1-RE2-B	OA1-RE2-SP2		
OA1-RE2-C	OA1-RE2-SP3	X	
OA1-RE2-D	OA1-RE2-SP4	X	
OA1-RE2-E	OA1-RE2-SP5	X	Lead
	PL-GS-2-2.5'	X	
OA1-RE2-F	OA1-RE2-SP6	X	
OA1-RE2-G	OA1-RE2-SP7	X	Lead
OA1-RE2-H	OA1-RE2-SP8	X	
	RR-GS-37-4'		
OA1-RE2-I	OA1-RE2-SP9	X	
OA1-RE2-J	OA1-RE2-SP10	X	
OA1-RE3-A	OA1-RE3-SP1		
OA1-RE3-B	OA1-RE3-SP2	X	
OA1-RE3-C	OA1-RE3-SP3	X	
OA1-RE3-D	OA1-RE3-SP4		
OA1-RE3-E	OA1-RE3-SP5	X	
OA1-RE3-F	OA1-RE3-SP6		
OA1-RE3-G	OA1-RE3-SP7		
OA1-RE3-H	OA1-RE3-SP8		
OA1-RE3-I	OA1-RE3-SP9		
	RR-GS-35-4'		
OA1-RE3-J	OA1-RE3-SP10		

X Denotes stockpile disposition based on soil sample failing a screening criterion.

Blank space denotes soil samples which pass all screening criteria.